# APPENDIX A

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

95-1276, - 1324

WANG LABORATORIES, INC.,

Plaintiff-Appellant,

v.

MITSUBISHI ELECTRONICS AMERICA, INC. and MITSUBISHI ELECTRIC CORPORATION,

Defendant/Cross-Appellants.

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DECIDED: January 3, 1997

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Before RICH, MAYER, and SCHALL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* RICH. Concurring in part and concurring in the judgment opinion filed by *Circuit Judge* MAYER.

RICH, *Circuit Judge.*

Appellant Wang Laboratories, Inc., sued Mitsubishi Electronics America, Inc. for infringement of two patents. Mitsubishi and its parent, Mitsubishi Electric Corporation, (collectively "Mitsubishi") filed a declaratory judgment action and the cases were consolidated in the United States District Court for the Central District of California. The district court granted Mitsubishi partial summary judgment of non-infringement of one patent. A jury then found both patents not invalid and that Mitsubishi literally infringed the other patent. But the jury concluded that Wang's conduct in dealing with Mitsubishi created an implied license from Wang to Mitsubishi to practice the invention claimed in the patent held infringed. Wang appeals and Mitsubishi cross-appeals. Since we agree that Mitsubishi as licensed, there was no infringement and we therefore affirm.

## BACKGROUND

The two patents in suit relate to memory modules known as "Single In-line Memory Modules" or SIMMs. Generally, Wang's SIMM design consists of nine memory chips with one reserved for parity checking. The module is sometimes described as a "times nine" or "X9" module. The parity chip independently stores additional information allowing a device to verify the validity of data stored in and retrieved from the other eight memory chips. The nine chips are encased in plastic carriers having leads ("leaded") and are arranged in one row, along with associated decoupling capacitors to protect the chips, on a substrate with 30 connective terminal pins. When mounted on the printed-circuit "mother board" of a

computer containing the computer's central processing unit, for example, these modules allow the computer to write and read data in binary format to and from the SIMMs for storage. In developing its SIMM, Wang used 64-kilobit ("64K") memory chips. Together, eight 64K memory chips could store 512 kilobits or 64 kilobytes of data (eight binary digits or "bits" constitute one "byte"). More recent SIMMs may contain 256-kilobit ("256K") or larger memory chips.

James Clayton, the named inventor in the patents in suit, joined Wang Laboratories in the fall of 1982. At the time, computer memory components remained relatively large, expensive, and difficult to upgrade. In the spring of 1983, Clayton developed the SIMM as a smaller, lower cost, replaceable form of computer memory. On September 2, 1983, Clayton, with Wang as assignee, applied for a patent on the SIMM invention, application serial number 528,817. The original application contained three claims, all of which the Patent and Trademark Office ("PTO") rejected on June 13, 1985. The PTO based its rejection, in part, on obviousness of the claimed subject matter. Wang amended the application to cancel claims 1, 2, and 3, and to add claims 4, 5, and 6. The new claims clarified that the invention consisted of a single row of memory chips packaged in "plastic leaded chip carriers" for mounting on "epoxy-glass" printed circuit boards. The PTO's final office action, however, rejected the amended claims, this time solely based on obviousness.

Wang submitted a file wrapper continuation application, serial number 873,879, on June 12, 1986, replacing claims 4, 5, and 6 with claim 7. Wang then abandoned the initial application. In "remarks"

accompanying the continuation application, Wang argued that the single new claim recited a unique, specific combination of elements distinguishable from the prior art, in particular from "[t]he EDI EDH-4816 publication describ[ing] a single in-line memory module which consists of eight ceramic chips mounted on a ceramic substrate. The module contains thirty-two terminal pins and ten decoupling capacitors on the main voltages." In contrast, Wang claimed "nine memory chips (eight for data, one for parity) contained in plastic leaded chip carriers and mounted on a [sic] epoxy-glass pc [printed circuit] board of particular dimensions. The module has thirty terminal pins and eight decoupling capacitors connected between the memory chips to suppress voltage spikes." The application resulted in patent No. 4,656,605 ('605 patent), issued April 7, 1987. The single claim reads (emphasis ours):

> 1. A memory module for installation on a printed circuit motherboard comprising:
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> *eight data memory chips for storing digital data,* each having a data input and output, a control input, and an address input, and each being packaged in a plastic leaded chip carrier;
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> *a ninth memory chip for storing error detection and correction information* associated with the eight data memory chips, said ninth memory chip having a data input and output, a control input and an address input interconnected with those of the eight memory chips, and a

control input to provide writing in or reading out of the ninth memory chip at times other than when said bytes of digital information are written into or read out of the eight data memory chips *to thereby facilitate said error detection and correction operation;*

an epoxy-glass printed circuit board substrate having a length and width adequate for mounting thereon only in a single row said nine memory chips and for interconnecting the control inputs and the address inputs of the memory chips so that bytes of digital information may be input to or output from the memory chips one at a time;

the substrate including thirty terminals for providing access to the data inputs and outputs, control inputs, and address inputs of the nine memory chips to enable reading and writing of bytes of digital information into and out of the eight memory chips and to enable reading and writing of error detection and correction information into and out of the eight memory chips;

support means for supporting the memory module at an angle with respect to the printed circuit motherboard when the memory module is installed thereon; and

*eight decoupling capacitors, mounted on said substrate and connected between the nine memory chips,* for suppressing transient voltage spikes between said memory chips.

Wang filed another application, on February 20, 1987, as a continuation of application number 873,879. This application comprised two claims and led to patent No. 4,727,513 ('513 patent), which issued on February 23, 1988. The two claims of the '513 patent are as follows:

1. A memory module for installation on a printed circuit motherboard comprising

nine data memory chips for storing digital data, each having a data input and output, control input, and an address input, and each being packaged in a plastic leaded chip carrier, wherein said ninth memory chip is for storing detection and correction information associated with the eight data memory chips,

an epoxy-glass printed circuit board substrate having a length and width adequate for mounting thereon only in a single row said nine memory chips and for interconnecting the control inputs and the address inputs of the memory chips so that bytes of digital information may be input to or output from the memory chips,

the substrate including thirty terminals for providing access to the data inputs and outputs, control inputs, and address inputs of the nine memory chips and to enable reading and writing of information into and out of the nine chips,

support means for supporting the memory module at an angle with respect to a motherboard and

decoupling capacitors mounted on said substrate and coupled to the memory chips for suppressing transient voltages.

2. The module of claim 1 wherein all nine memory chips are interconnected such that data is input to or output from the ninth memory chips [sic] when data is input to or output from the other eight memory chips.

A panel of Wang employees, including Clayton, introduced the SIMM technology to members of the computer industry press in June 1983. After giving a detailed description of their invention, Wang personnel answered questions. According to the panelists, Wang hoped to preempt the anticipated future introduction of 256K chips by Japanese manufacturers in a format known as the Small Outline Integrated Circuit or SOIC. By combining eight existing 64K chips into a 64-kilobyte package, Wang could introduce immediately a smaller, denser, lower cost memory option. The panel went on to note an expected struggle at the Joint Electronic Device Council ("JEDEC"), a committee of the Electronic Industries Association invested with

responsibility for setting industry standards, over which format would become the memory module standard.

Clayton described the period preceding the upcoming JEDEC meetings, with manufacturers awaiting indication of which way the market would go before committing to a module design. He explained Wang's belief that the present introduction of its new package should be the catalyst to sway the industry to its approach. Clayton revealed that Wang would not produce SIMMs. Instead, Wang intended to encourage others to produce the modules and would then buy SIMMs for use in its products. The panel indicated that companies already were preparing to make SIMMs. In response to questions, a panelist stated that Wang was not seeking patent rights in the SIMM,[1] that no licensing agreements were involved for the companies approached by Wang to make SIMMs, and that SIMM makers could sell their products to third parties. Panelist Daniel Devlin summarized Wang's goal: "Hopefully if they sell it, and if they have enough interest, and the market gets big enough, we get the advantage of the cost reduction because of the volumes involved." Numerous trade publications carried SIMM stories in their July or August 1983 issues.

Wang subsequently brought its SIMMs to JEDEC and sought to persuade the group to designate Wang's design a standard. Wang argued for adoption of the SIMM from September 1983 through June 1986, when JEDEC accepted the SIMM as a standard. During that

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1 Clayton mentioned that Wang's legal office was investigating only the possibility of patenting the parity feature.

period, Wang did not inform JEDEC of its ongoing pursuit of patent rights in the SIMM. Meanwhile, several manufacturers cooperated with Wang to begin mass producing and marketing SIMMs. As predicted in the 1983 press presentation, a large market developed for the modules and Wang became a high volume purchaser.

Mitsubishi first met with Wang regarding SIMMs in December 1983. In their meetings, Wang supplied drawings and other details to Mitsubishi and repeatedly requested that Mitsubishi manufacture SIMMs. Mitsubishi researched the possibility of producing SIMMs for Wang, but did not proceed with the project at that time. After Mitsubishi began making 256K memory chips, however, Mitsubishi decided to assemble 256K SIMMs, incorporating the new chips into a SIMM similar to Wang's, for sale to Wang and others. Mitsubishi declined to assess engineering costs to Wang, contrary to its asserted practice when creating a custom product exclusively for a particular purchaser.

In 1985 meetings, in the context of ongoing contracts between the two companies, Mitsubishi and Wang discussed Mitsubishi's new 256K SIMMs.[2] In one meeting, Clayton suggested that Mitsubishi modify its SIMM by placing the decoupling capacitors on the same side of the substrate with the chips, as in the original Wang design. Mitsubishi complied.

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[2] Wang states that little evidence exists as to the exact number or content of meetings from December 1983 through 1989 but admits that the parties remained in contact and that from 1985 forward "about sixty meetings" took place, many addressing SIMM technology. Mitsubishi counters that Wang lost calendars and notebooks that would have filled in details of the discussions.

Mitsubishi went on to mass produce 256K SIMMs; and in 1987, Wang began buying Mitsubishi SIMMs. Wang never informed Mitsubishi of its patent applications, patents, or of any intent to execute a license or receive royalties until a December 22, 1989 letter accusing Mitsubishi of infringing the '605 and '513 patents, which had issued in 1987 and 1988 respectively.

Wang sued Mitsubishi for infringement on June 4, 1992, in the United States District Court for the Eastern District of Virginia. Wang argued that Mitsubishi literally infringed the '513 patent and infringed the '605 patent under the doctrine of equivalents. Mitsubishi had the case transferred to the United States District Court for the Central District of California and filed counterclaims seeking a declaratory judgment of invalidity, non-infringement, and unenforceability, as well as alleging assorted state and federal antitrust violations. Mitsubishi also asserted several affirmative defenses, including the defense that Wang's conduct created an implied license.

Wang moved for summary judgment that Mitsubishi infringed the '605 patent under the doctrine of equivalents because the nine decoupling capacitors beneath nine memory chips in Mitsubishi's SIMMs are equivalent to the "eight decoupling capacitors . . . between the nine memory chips" claimed in Wang's '605 patent. The court denied Wang's motion. Mitsubishi then sought summary adjudication that prosecution history estoppel barred Wang from relying on the doctrine of equivalents with regard to this "eight capacitor limitation." For support, Mitsubishi focused on Wang's June 12, 1986, amendment and accompanying remarks distinguishing claim 7 from the EDI EDH-4816 publication disclosing 10 capacitors.

The district court agreed that Wang relied on the "unique combination of elements" in its design, including exactly eight capacitors, and granted partial summary judgment of non-infringement by Mitsubishi of the '605 patent.

The parties tried the remaining issues to a jury. At the close of evidence, each side was denied judgment as a matter of law ("JMOL") under Rule 50(a). Next, Wang and Mitsubishi fought over the formulation of the implied license instruction to the jury. Wang submitted legal estoppel language; Mitsubishi objected and offered equitable estoppel or estoppel by conduct as the basis of its license. The final instruction merged the parties' competing proposals into one instruction which read as follows:

> One who owns a patent as patentee or assignee, having the right to exclude others from making, using, or selling what is claimed, may agree to let another do one or more of those acts. This is called a license, and the person allowed to do the set of acts is a licensee.
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> An implied license is a form of implied-in-fact contract. In order to proved [sic] the defense of implied license, [Mitsubishi] must establish by a preponderance of the evidence that (1) there was an existing relationship between Wang and [Mitsubishi]; (2) within that relationship, Wang transferred a right to use SIMM invention to [Mitsubishi]; (3) the right was transferred for valuable consideration;

> and (4) Wang has now denied the existence of the right it transferred to [Mitsubishi].
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> In deciding whether [Mitsubishi has] proved the existence of an implied license, you may consider statements and conduct of Wang from which one would reasonably infer Wang's consent to Mitsubishi's making, using, or selling products to persons other than Wang under the patents.
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> If you find that a right to make, use, or sell the SIMM invention was granted to [Mitsubishi] then you should find and [sic] implied license was granted to [Mitsubishi] by Wang.

The relevant question to the jury on the Special Verdict Form read, "Has Mitsubishi proven by a preponderance of the evidence that Wang licensed Mitsubishi to make, use or sell the subject matter of the '513 patent?" The jury answered "Yes." On other issues, the jury determined that Mitsubishi failed to prove that the '605 or '513 patents were invalid for obviousness or for the alleged nondisclosure of the inventor's best mode. The jury further found that the Mitsubishi SIMMs infringed the '513 patent claims, but that infringement was not willful. In its advisory capacity, the jury concluded that Mitsubishi did not prove its defenses of inequitable conduct, equitable estoppel, laches, patent misuse, or unclean hands.

After the verdict, the court held a hearing on Mitsubishi's equitable defenses, then directed Wang to

draft a proposed judgment and findings of fact and conclusions of law adopting the jury's determinations on the equitable defenses, which Wang did. Mitsubishi objected to Wang's drafts and protested that, although the findings and conclusions did not cover the implied license, Wang wrote findings on other issues which contradicted and undermined the jury's implied license verdict. Furthermore, Wang had written that the jury found an implied license, "under the doctrine of legal estoppel." Notwithstanding Mitsubishi's objections, the court entered both the Judgment and the Findings of Fact and Conclusions of Law.

On March 6, 1995, the parties argued six motions to the district court. Wang's motions addressed the implied license defense. First, Wang moved for Rule 50(b) JMOL because Wang believed that no reasonable jury could find Mitsubishi provided valuable consideration for a license, as required by Wang's formulation of implied license elements based on legal estoppel. Second, Wang sought a partial new trial on the implied license defense. Third, Wang moved to amend the judgment based on its theory that the implied license conclusion mandated a finding that an implied contract existed and that, assuming an absence of other consideration, Mitsubishi must have promised royalties to Wang.

Mitsubishi moved for JMOL contending that because Clayton admitted he knew a best mode which comprised two power pins and two ground pins wired in a symmetrical configuration, and because the patent contains no express disclosure of that wiring scheme, the jury erred in finding Mitsubishi failed to prove that Wang concealed the inventor's best mode. Next, Mitsubishi asserted that the evidence required a finding

of obviousness and, therefore, invalidation of Wang's patents under 35 U.S.C. § 103. Last, Mitsubishi argued that five differences between Mitsubishi's modules and the SIMM claimed in the '513 patent bar a finding of literal infringement of the '513 patent. The court denied all six motions.

## ANALYSIS

Wang appeals the partial summary judgment of non-infringement of the '605 patent based on prosecution history estoppel, and the resolution of the implied license issue to negate infringement of the '513 patent. Mitsubishi cross-appeals from the judgment on best mode, nonobviousness, and infringement.

### The '605 PATENT: Prosecution History Estoppel

Wang asserts that the district court erred when it ruled that prosecution history estoppel limits the scope of the '605 patent to SIMMs with exactly eight capacitors. Since the estoppel ruling prevents Wang from resorting to the doctrine of equivalents to extend the patent's scope to cover nine capacitors, and given that Mitsubishi's modules with nine capacitors do not literally infringe the '605 patent, the court granted partial summary judgment providing that Mitsubishi's modules with nine capacitors do not infringe the '605 patent. The issue of whether the estoppel extends to the '513 patent is not before us. *See Mark I Mktg. Corp. v. R.R. Donnelley & Sons Co.*, 66 F.3d 285, 291, 36 USPQ2d 1095, 1100 (Fed. Cir. 1995), *cert. denied*, 116 S. Ct. 917 (1996) (extended estoppel from parent to patent from continuation application). Summary judgment is appropriate when no genuine issue of material fact exists and judgment is proper as a matter of law. Fed.

R. Civ. P. 56(c). We review grants of summary judgment de novo. *Conroy v. Reebok Int'l, Ltd.*, 14 F.3d 1570, 1575, 29 USPQ2d 1373, 1377 (Fed. Cir. 1994).

Application of the of the doctrine of equivalents may allow a patentee to recover for infringement though the accused device falls outside the literal scope of the claims if the differences between the claimed invention and the device are insubstantial. *See, e.g., Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1218, 36 USPQ2d 1225, 1229-30 (Fed. Cir. 1995). Prosecution history estoppel acts as one check on application of the doctrine of equivalents, *Mark I*, 66 F.3d at 291, 36 USPQ2d at 1100, by precluding a patentee from regaining, through litigation, coverage of subject matter relinquished during prosecution of the application for the patent. *Zenith Lab., Inc. v. Bristol-Myers Squibb Co.*, 19 F.3d 1418, 1424, 30 USPQ2d 1285, 1290 (Fed. Cir. 1994). Whether estoppel applies to a question of law. *LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n*, 867 F.2d 1572, 1576, 9 USPQ2d 1995, 1998 (Fed. Cir. 1989). We examine the statements and actions of the patentee before the PTO during prosecution, *Haynes International, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1578, 28 USPQ2d 1652, 1656 (Fed. Cir. 1993); *Pall*, 66 F.3d at 1219, 36 USPQ2d at 1230, and ask what a competitor reasonably may conclude the patentee surrendered to gain issuance of the patent. *Haynes*, 8 F.3d at 1578, 28 USPQ2d at 1656. Arguments and amendments made to secure allowance of a claim, especially those distinguishing prior art, presumably give rise to prosecution history estoppel. *Pall*, 66 F.3d at 1219, 36 USPQ2d at 1230. Once prosecution history estoppel limits the scope of a patent, the patentee may not recover for infringement where infringement would require an equivalence between a claim element and an

aspect of the accused item that falls within the estoppel. *Southwall Technologies, Inc., v. Cardinal IG Co.*, 54 F.3d 1570, 1579, 34 USPQ2d 1673, 1679-80 (Fed. Cir.), *cert. denied*, 116 S. Ct. 515 (1995).

Wang amended its claims to distinguish its SIMMs from prior art. During the prosecution leading to issuance of the '605 patent, Wang twice faced rejection of its claims for obviousness. Following the final office action rejecting all three claims and citing the EDI EDH-4816 publication, Wang submitted a file wrapper continuation application that condensed the definition of the invention into a single claim. The new claim added several limitations including, for the first time, exact numbers of terminals and decoupling capacitors. In remarks accompanying the new claim, Wang identified the 30 terminals and the eight decoupling capacitors as features distinguishing its claimed SIMM from the memory module disclosed in the EDI publication with 32 terminals and 10 decoupling capacitors. Wang emphasized the "unique combination of elements" in its SIMM, and cited extensive "exact copying of the invention" as evidence of patentability. After considering Wang's submission, the PTO allowed the narrowed claim.

Wang's actions before the PTO trigger prosecution history estoppel. The PTO rejected claims as obvious in light of prior art; the patentee amended, adding limitations arguing distinctions from the prior art which persuaded the PTO to allow the amended claim. In *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993), for example, an earlier lawsuit for infringement of the same two patents, this court held that Wang had limited the scope of its patents to SIMMs with (1) exactly nine memory

chips (2) in a single row. *Id.* at 868, 26 USPQ2d at 1776. We held that prosecution history estoppel attached because Wang had claimed its invention with precision to distinguish a plurality of prior art references in the field of this invention. *Id.* Similarly, we now hold that Wang likewise limited its claim to exactly eight capacitors. A competitor such as Mitsubishi would reasonably conclude that Wang surrendered coverage of SIMMs not meeting the eight capacitors limitation. Therefore, we affirm the district court's grant of partial summary judgment of non-infringement of the '605 patent.

**The '513 Patent: Implied License**

Mitsubishi argued at trial that Wang's conduct had created an implied license to it under the '513 patent. The parties agreed to submit Mitsubishi's implied license defense to the jury and the jury found an implied license to exist. The district court entered judgment on the verdict, and added the rationale that the implied license arose "under the doctrine of legal estoppel." Focusing on the legal estoppel rationale, Wang moved for JMOL or a new trial on the implied license issue because, according to Wang, a reasonable jury could not have found facts to support legal estoppel and because the court misapplied the law of legal estoppel. *See* Fed. R. Civ. P. 50(b) and 59(a). Wang also moved the court to infer contract terms requiring Mitsubishi to pay royalties to Wang as part of the implied license. *See* Fed. R. Civ. P. 59(e). The district court denied the motions. Wang now seeks a reversal of the judgment or new trial on the implied license defense. In an appeal from a judgment following denial of JMOL, we must affirm factual findings that are supported by substantial evidence, we

then review legal conclusions to determine whether the factual findings can bear them. *Railroad Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1512, 220 USPQ 929, 935-36 (Fed. Cir. 1984); *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 672-73 (Fed. Cir. 1984). We review the denial of a motion for a new trial for abuse of discretion. *Railroad Dynamics*, 727 F.2d at 1512, 220 USPQ at 935-36.

Because the second step of this review will require us to determine whether the factual findings support the conclusion of law, we must first ascertain what facts the jury found relating to Mitsubishi's implied license defense. *Id.* The Special Verdict Form asked the jury to answer only the ultimate question of whether an implied license exists, so the jury instructions serve as our most direct guide to what the jury decided.[3] *See Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 765, 9 USPQ2d 1417, 1423 (Fed. Cir. 1988) (we accept factual findings presumed from jury verdict, subject to substantial evidence test). In order to arrive at its affirmative answer on the implied license question, the jury necessarily found that (1) a relationship existed between Wang and Mitsubishi,

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[3] As mentioned above, the district court entered findings of fact on Mitsubishi's equitable defenses, but not the implied license defense. We agree with Mitsubishi that some of the court's findings directly contradict the jury findings; where that occurs, we accept the jury's findings and consider the court's erroneous given that the court later upheld the jury findings in denying JMOL. *See Newell*, 864 F.2d at 762, 9 USPQ2d at 1421 (court's fact finding subject to clearly erroneous standard); *see also Therma-Tru Corp. v. Peachtree Doors, Inc.*, 44 F.3d 988, 995, 33 USPQ2d 1274, 1278 (Fed. Cir. 1995) (jury verdict operates as finding of fact precluding contrary judicial findings).

(2) within that relationship, Wang granted to Mitsubishi a right to use its SIMM inventions, (3) Wang received valuable consideration for that grant of right, (4) Wang denied that Mitsubishi had an implied license, and (5) Wang's statements and conduct created the impression that Wang consented to Mitsubishi making, using, or selling Wang's patented inventions, including sales to consumers other than Wang. Separately, the jury found that Mitsubishi made, used, or sold several versions of SIMMs that would infringe the '513 patent but for the license.

With regard to the factual component of our review, Wang challenges only the finding of valuable consideration. Before we can apply the substantial evidence test to this finding, however, it becomes necessary to look beyond the jury instructions and verdict to discover what the jury understood to constitute "valuable consideration." The district court's order denying Wang's motion for JMOL identified three benefits conferred on Wang: (1) by agreeing to manufacture and sell SIMMs, Mitsubishi contributed to a "high volume supply and downward pressure on [the] price" of SIMMs, which benefited Wang as a purchaser of SIMMs; (2) Mitsubishi absorbed development and tooling costs; and, (3) Mitsubishi redesigned its SIMMs to conform to Wang's preferred design. The district court ruled that each form of consideration was supported by substantial evidence.

Looking to the record in search of substantial evidence, Wang's own statements show that when the company introduced its SIMM design in June 1983, Wang intended to buy SIMMs from other producers rather than produce SIMMs itself. Eventually, Wang hoped to "get the advantage of the cost reduction

because of the volumes involved." The evidence indicates that Wang considered lower prices and a larger market to be of value to it, as they obviously were as a large user of SIMMs. In time, JEDEC adopted Wang's SIMM design as a standard in what became a multi-billion dollar market. The market grew; prices dropped. The record contains evidence that Mitsubishi contributed to this advantageous outcome. Clayton's notes about Mitsubishi, for example, contain references to prices "dropping to mid-teens." Wang introduced evidence that dozens of producers have participated in making the SIMM market, and that Mitsubishi sold $361 million worth of SIMMs between April 1985 and March 1994. A reasonable person could conclude from the evidence that Mitsubishi supplied consideration to Wang by helping Wang achieve the market scenario it sought and valued.

Substantial evidence of the second and third benefits also appears on the record. Mitsubishi personnel testified that they made design changes to accommodate Wang's needs: specifically, moving the capacitors onto the same side of the substrate as the memory chips. Similarly, testimony indicated that Mitsubishi declined to assess development and tooling charges to Wang because it understood Wang was permitting Mitsubishi to sell SIMMs to other customers. Clayton's notes reveal that, from the first meeting onward, he closely followed Mitsubishi's development and tooling of SIMMs with 64K or 256K chips in PLCCs. Clayton clearly wanted Mitsubishi to make 64K SIMMs, which Mitsubishi decided against, but Clayton also sought "to open [communication with] Japan for us on a 256K X9 SIMM." All the while, Wang and Mitsubishi exchanged designs and samples. A reasonable person could conclude that Wang received

something it valued because Mitsubishi was persuaded to follow Wang's design suggestions, but was led to believe the resultant SIMMs were not custom products for Wang and did not assess charges. Although Wang points to contrary evidence, we cannot reevaluate credibility or substitute our choices for those of the jury. *Perkin-Elmer*, 732 F.2d at 893, 221 USPQ at 672-73. Therefore, these findings survive the substantial evidence test.

With the findings of fact firmly in hand, we now turn to the legal conclusion that an implied license exists. *See Met-Coil Sys. Corp. v. Korners Unltd., Inc.*, 803 F.2d 684, 687, 231 USPQ 474, 476 (Fed. Cir. 1986) (implied license is question of law). In patent law, an implied license merely signifies a patentee's waiver of the statutory right to exclude others from making, using, or selling the patented invention. *Spindelfabrik* patentee led the other to act. *Bandag, Inc. v. Al Bolser's Tire Stores, Inc.*, 750 F.2d 903, 925-26, 223 USPQ 982, 998-99 (Fed. Cir. 1984); *Stickle v. Heublin, Inc.*, 716 F.2d 1550, 1559, 219 USPQ 377, 383 (Fed. Cir. 1983). In *Bandag*, we reversed a conclusion of implied license because the infringer failed to show an awareness of the conduct which supposedly created the license. *Bandag*, 750 F.2d at 925-26, 223 USPQ at 998-99. In *Stickle*, we affirmed that no implied license existed absent the required nexus between the patentee's conduct and the infringing actions, given that the course of infringing action only began later and distinct from the cited conduct. *Stickle*, 716 F.2d at 1559, 219 USPQ at 383-84.

Neither this court nor the Supreme Court, however, has required a format finding of equitable estoppel as a prerequisite to a legal conclusion of implied license. *See AMP*, 389 F.2d at 453-54, 156 USPQ

at 651. To do so would remove all distinction between the doctrines. Rather the estoppel doctrines serve as guidelines. *See id.* at 451-52, 156 USPQ at 649-50. The primary difference between the estoppel analysis in implied license cases and the analysis in equitable estoppel cases is that implied license looks for an affirmative grant of consent or permission to make, use, or sell: i.e., a license. *See Stickle*, 716 F.2d at 1559, 219 USPQ at 383-84. Equitable estoppel, on the other hand, focuses on "misleading" conduct suggesting that the patentee will not enforce patent rights. *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1041-44, 22 USPQ2d 1321, 1335-38 (Fed. Cir. 1992). In *Aukerman*, we described a typical equitable estoppel situation as one in which (1) the infringer knows of the patent, (2) the patentee objects to the infringer's activities, (3) but the patentee does not seek relief until much later, (4) thereby misleading the infringer to believe the patentee will not act. *Id.* at 1042-43, 22 USPQ2d at 1335-36. Thus, the two doctrines are not conterminous. Illustratively, both the jury, in its advisory capacity, and the district court decided against Mitsubishi on the defense of equitable estoppel per se, with *misleading* conduct as a required component of that defense.

Legal estoppel refers to a narrower category of conduct encompassing scenarios where a patentee has licensed or assigned a right, received consideration, and then sought to derogate from the right granted. *Spindelfabrik*, 829 F.2d at 1080, 4 USPQ2d at 1048; *AMP*, 389 F.2d at 452, 156 USPQ at 649-50. In *AMP*, for example, a patentee granted a license to, and received payment from, the United States for use of an "idea" which later became the subject matter of its patent. *Id.* at 453-54, 156 USPQ at 651. The patentee then discovered a preexisting patent covering an aspect of

the invention. *Id.* at 451, 156 USPQ at 648. After acquiring the preexisting patent, the patentee sued the government for infringement of the preexisting patent. *Id.* The Court of Claims held that an implied license barred patentee from using the preexisting-but-after-acquired patent to derogate from the express license negotiated under the other patent. *Id.* at 454, 156 USPQ at 651.

We review issues of law, like the implied license defense, de novo. *Guinn v. Kopf*, 96 F.3d 1419, 1421, 40 USPQ2d 2157, 1159 (Fed. Cir. 1996). In this process, we review judgments rather than opinions. *See, e.g., Baxter Healthcare Corp. v. Spectramed, Inc.*, 49 F.3d 1575, 1582, 34 USPQ2d 1120, 1125 (Fed. Cir.), *cert. denied*, 116 S. Ct. 272 (1995). Moreover, we may affirm a district court's action where the record offers a route to affirm that neither expands nor contracts the rights established for either party by the judgment. *Consolidated Aluminum Corp. v. Foseco Int'l Ltd.*, 910 F.2d 804, 815, 15 USPQ2d 1481, 1489 (Fed. Cir. 1990). Here, we agree with the district court that the factual findings support the jury's legal conclusion on the implied license defense, although we do not necessarily agree with all of the district court's reasoning. The jury's findings may support an implied license in the nature of legal estoppel given the transfer of a right for consideration and the subsequent suit for infringement, but we instead follow the lead of our predecessor, the United States Court of Claims, and focus on an alternative form of estoppel. *See AMP*, 389 F.2d at 452, 156 USPQ at 650 (rejected equitable estoppel and affirmed based on legal estoppel).

Although judicially implied licenses are rare under any doctrine, Mitsubishi proved that the "entire

course of conduct" between the parties over a six-year period led Mitsubishi to infer consent to manufacture and sell the patented products. *See De Forest*, 273 U.S. at 241. Furthermore, the level of interaction between the parties while Mitsubishi designed and made SIMMs distinguishes this scenario from *Bandag* where the infringer based its failed defense on conduct unknown to the infringer when the infringement occurred. *See Bandag*, 750 F.2d at 925-26, 223 USPQ at 998-99. The record shows that Wang tried to coax Mitsubishi into the SIMM market, that Wang provided designs, suggestions, and samples to Mitsubishi, and that Wang eventually purchased SIMMs from Mitsubishi, before accusing Mitsubishi years later of infringement. We hold, as a matter of law, that Mitsubishi properly inferred consent to its use of the invention of Wang's patents.

The findings that Wang bestowed "a right to use the SIMM invention" and that Mitsubishi supplied valuable consideration to Wang, support our holding that Wang's conduct created a license. This falls short of the express licenses or assignments usually discussed in conjunction with legal estoppel, but it constitutes part of a course of conduct that transcends "unilateral expectations . . . of one party." *Stickle*, 716 F.2d at 1559, 219 USPQ at 383. Wang not only led Mitsubishi to infer consent, Wang obtained payment. Wang publicly announced it desired compensation. Wang also manifested this desire in other ways, for example, by Wang's efforts at JEDEC to have its SIMM designated a standard. With the contributions of Mitsubishi and others, Wang received exactly the remuneration it desired: Wang's design is an industry standard, and the benefits of a large market and lower prices for SIMMs redound to this day. In sum, Wang consented

to Mitsubishi's use of the invention, granted the right to make, use, or sell the patented SIMMs without interference from Wang, and received consideration. Therefore, we agree with the district court's determination, reiterated in denying Wang's motion to amend the judgment, that Mitsubishi possesses an irrevocable royalty-free license under the '513 patent.

Because the jury's findings of fact are supported by substantial evidence and the jury reached the correct legal conclusion based on its findings, we affirm the judgment regarding Mitsubishi's implied license defense. In reaching this result, we hold that Mitsubishi's implied license is in the nature of equitable rather than legal estoppel, because the license arose from an accord implicit in the entire course of conduct between the parties as discussed in *De Forest* and subsequent cases relying on equitable estoppel as a guideline. We further hold that the district court did not abuse its discretion by denying Wang a partial new trial on this issue.

**Nonobviousness, Best Mode, & Infringement: '513 Patent**

The three issues raised in Mitsubishi's cross-appeal remain for disposition. First, Mitsubishi asks us to reclassify several memory modules predating Wang's invention as analogous prior art relevant to the nonobviousness of Wang's SIMM, *see Toshiba*, 993 F.2d at 863-64, 26 USPQ2d at 1773 (analogous means relevant to nonobviousness), and to hold the '605 and '513 patents invalid for lack of nonobvious subject matter. *See Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566, 1 USPQ2d 1593, 1595-96 (Fed. Cir. 1987) (legal conclusion regarding nonobviousness relies on a

factual foundation, including definition of the scope and content of prior art). In denying Mitsubishi JMOL on this issue, the district court summarized substantial evidence supporting the jury's presumed finding that the modules cited by Mitsubishi fall outside the scope of the analogous prior art. On appeal, Mitsubishi added nothing to detract from these findings. With the factual foundation intact, we affirm the conclusion on nonobviousness. *See Panduit*, 810 F.2d at 1566, 1 USPQ2d at 1596.

Next, Mitsubishi disputes the finding that Wang's patents are not invalid for failure to disclose Clayton's conceded best mode of practicing the invention. *See* 35 U.S.C. § 1123 (1996). Noncompliance with the best mode requirement involves a bifurcated factual inquiry. *Great N. Corp. v. Henry Molded Prod., Inc.*, 94 F.3d 1569, 1571, 39 USPQ2d 1997, 1999 (Fed. Cir. 1996). The factfinder must determine that subjectively the inventor knew a better mode of practicing the invention than the specification discloses, and that the inventor concealed the better mode. *Id.* The substantial evidence standard applies on appeal. *Id.* Although Wang admits that the specifications do not explicitly disclose Clayton's contemplated best mode, Mitsubishi failed to convince the jury that Wang concealed Clayton's best mode. The district court ruled that one skilled in the art would discern this best mode from the disclosure. After reviewing the record, we agree that substantial evidence supports the jury verdict.

Finally, Mitsubishi argues that the district court incorrectly interpreted Wang's '513 patent claims in upholding the infringement verdict. *See Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1269-70, 229 USPQ 805, 811 (Fed. Cir. 1986) (claim interpretation is

premise for factual comparison of claims to accused device). Courts must interpret disputed terms in patent claims, as a matter of law, based on the prosecution history, the specification, and the claims themselves. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995), *aff'd*, 116 S. Ct. 1384 (1996). In its motion for JMOL, Mitsubishi interpreted five phrases in the '513 patent's claims. In seeking reversal, Mitsubishi reiterates its interpretation of those same claim elements.

Mitsubishi first asks us to interpret "a plastic leaded chip carrier" to refer solely to the "PLCC" made by Texas Instruments and used by Clayton in designing the SIMM. We hold that this language serves to distinguish the SIMM chip carriers from ceramic chip carriers found in the prior art, and that this language does not limit the claims to a particular make and model of plastic chip carrier. Second, Mitsubishi asserts that "substrate . . . adequate for mounting thereon only in a single row said nine memory chips" limits substrate size to the bare minimum required for mounting nine chips in a single row. We hold that this language does not foreclose extension of the substrate, for some purpose, where the extra space cannot hold additional chips. Third, Mitsubishi contends that "thirty terminals for providing access" counts only terminals actively connected to a memory chip. We hold that "terminals" need not be connected. Fourth, Mitsubishi argues that "the ninth memory chip is for storing detection and correction information" means that the ninth chip must store two distinct kinds of information. We hold that this language does not necessarily refer to two types of information, especially given that Wang described the ninth chip as a "parity feature" storing only one kind of data known as "parity

bits." Fifth, Mitsubishi states that "support means for supporting the memory module at an angle" limits the claim to the style of pins used by Clayton in designing the SIMM. We hold that this language does not mandate a pin style matching Clayton's initial style. Therefore, we arrive at the same interpretation as the district court. Since Mitsubishi does not deny that the claims as understood by the district court read on the accused modules, we affirm the finding of infringement.

**AFFIRMED.**

United States Court of Appeals for the Federal Circuit

95-1276, -1324

WANG LABORATORIES, INC.,

Plaintiff-Appellant,

v.

MITSUBISHI ELECTRONICS AMERICA, INC. and MITSUBISHI ELECTRIC CORPORATION,

Defendants/Cross-Appellants.

MAYER, *Circuit Judge*, concurring in part and concurring in the judgment.

I join the court's opinion insofar as it affirms the judgment of noninfringement of the '605 patent, and the finding of an implied license to Mitsubishi of the '513 patent. On the court's disposition of the cross-appeal, I concur in the judgment.

## APPENDIX B

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

95-1276, - 1324

WANG LABORATORIES, INC.,

Plaintiff-Appellant,

v.

MITSUBISHI ELECTRONICS AMERICA, INC. and MITSUBISHI ELECTRIC CORPORATION,

Defendant/Cross-Appellants.

## JUDGMENT

Appeal from decisions of the United States District Court for the Central District of California in CV 92-4698 entered January 24, 1995 and March 16, 1995, Judge John G. Davies.

This CAUSE having been heard and considered, it is

ORDERED AND ADJUDGED: **AFFIRMED**

ENTERED BY ORDER OF THE COURT

DATED: JAN 03, 1997

/s/ Jan Horbaly
Jan Horbaly, Clerk

ISSUED AS A MANDATE: March 19, 1997

# APPENDIX C

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

95-1276, -1324

WANG LABORATORIES, INC.,

Plaintiff-Appellant,

v.

MITSUBISHI ELECTRONICS AMERICA, INC. and MITSUBISHI ELECTRIC CORPORATION,

Defendant/Cross-Appellants.

## ORDER

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the CROSS-APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, DECLINED.

The mandate of the court will issue on March 19, 1997.

FOR THE COURT,
JAN HORBALY, CLERK

Dated: March 12, 1997

BY _____
Brian P. LeDuc
Associate Chief Deputy Clerk

## APPENDIX D

IN THE UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

| | |
|---|---|
| WANG LABORATORIES, INC.<br><br>Plaintiff,<br><br>v.<br><br>MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Defendant. | Civil Action No. 92-4698-JGD (RGx)<br><br>Consolidated With<br><br>Civil Action No. 92-3891-JGD (Kx)<br><br>**SPECIAL VERDICT FORM** |
| CONSOLIDATED WITH | |
| MITSUBISHI ELECTRIC CORPORATION and MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Plaintiffs,<br><br>v.<br><br>WANG LABORATORIES, INC., AND DOES 1 through 50.<br><br>Defendants. | |

*SPECIAL VERDICT FORM*

We, the Jury, in the above entitled cause finds as follows:

INFRINGEMENT

1. Has Wang proven by a preponderance of the evidence that Mitsubishi's leaded memory modules with PLCC-packaged DRAMs infringe Wang's '513 patent?

ANSWER: __X__ (YES) _____ (NO)

2. Has Wang proven by a preponderance of the evidence that Mitsubishi's leaded memory modules with SOJ-packaged DRAMs infringe Wang's '513 patent?

ANSWER: __X__ (YES) _____ (NO)

3. Has Wang proven by a preponderance of the evidence that Mitsubishi's leadless memory modules with PLCCpackaged DRAMs infringe the '513 patent?

ANSWER: __X__ (YES) _____(NO)

4. Has Wang proven by a preponderance of the evidence that Mitsubishi's leadless memory modules with SOJ-packaged DRAMs infringe the '513 patent?

ANSWER: __X__ (YES) _____ (NO)

WILLFUL INFRINGEMENT

5. Has Wang proven by clear and convincing evidence that Mitsubishi Electric Corporation's infringement of the '513 patent was willful?

ANSWER: _____ (YES) __X__ (NO)

6 Has Wang proven by clear and convincing evidence that Mitsubishi Electronics America, Inc.'s infringement of the '513 patent was willful?

ANSWER: _____ (YES) __X__ (NO)

INVALIDITY

7. Has Mitsubishi proven by clear and convincing evidence that the '605 and '513 patents fail to disclose the inventor's best mode for carrying out his invention?

ANSWER: _____ (YES) __X__ (NO)

8. Has Mitsubishi proven by clear and convincing evidence that James Clayton did not invent the claimed subject matter of the '605 and '513 patents?

ANSWER: _____ (YES) __X__ (NO)

9. Has Mitsubishi proven by clear and convincing evidence that James Clayton is not the sole inventor of the claimed subject matter of the '605 and '513 patents?

ANSWER: _____ (YES) __X__ (NO)

10. Has Mitsubishi proven by clear and convincing evidence that the claimed subject matter of the '513 and '605 patents was obvious to one skilled in the art to which it pertained at the time the invention was made?

ANSWER: _____ (YES) __X__ (NO)

IMPLIED LICENSE

11. Has Mitsubishi proven by a preponderance of the evidence that Wang licensed Mitsubishi to make, use and sell the subject matter of the '513 patent?

ANSWER: __X__ (YES) _____ (NO)

WAIVER

12. Has Mitsubishi proven by a preponderance of the evidence that Wang expressly waived its proprietary rights in the subject matter of the '513 patent?

ANSWER: ____ (YES) __X__ (NO)

UNENFORCEABILITY

13. Has Mitsubishi proven by clear and convincing evidence that Wang made any material false statement to the Patent Office or withheld any material information from the Patent Office?

ANSWER: ____ (YES) __X__ (NO)

14. If the answer to Question 13 is "yes," then has Mitsubishi proven by clear and convincing evidence that Wang made such statements or withheld such information with an intent to deceive the Patent Office?

ANSWER: ____ (YES) __X__ (NO)

15. Has Mitsubishi proven by a preponderance of the evidence that Wang misused the '605 and '513 patents?

ANSWER: ____ (YES) __X__ (NO)

16. Has Mitsubishi proven by a preponderance of the evidence that Wang may not assert the '605 and '513 patents against Mitsubishi because of the doctrine of unclean hands?

ANSWER: ____ (YES) __X__ (NO)

17. Has Mitsubishi proven by a preponderance of the evidence that Wang is estopped from asserting the '605 and '513 patents against Mitsubishi?

ANSWER: ____ (YES) __X__ (NO)

18. Has Mitsubishi proven by a preponderance of the evidence that Wang may not assert the '605 and '513 patents against Mitsubishi because of the doctrine of laches?

ANSWER: ____ (YES) __X__ (NO)

Dated: July 12, 1994

At Los Angeles, California

/s/Foreperson of the Jury
Foreperson of the Jury

## APPENDIX E

## UNITED STATES DISTRICT COURT

## FOR THE CENTRAL DISTRICT

## OF CALIFORNIA

## FINDINGS OF FACT AND CONCLUSIONS OF LAW

### A. Parties, Jurisdiction And Venue

1.

Wang Laboratories, Inc. ("Wang") is a Delaware corporation with its principal place of business at One Industrial Avenue, Lowell, Massachusetts 01850.

2.

Mitsubishi Electric Corporation ("MELCO") is a Japanese corporation with its principal place of business at 2-3 Marunouchi 2 --chrome, Chiyoda-Ku, Tokyo 100, Japan.

3.

Mitsubishi Electronics America, Inc. ("MELA") is a Delaware corporation with its principal place of business in Cypress, California. MELA is a wholly owned subsidiary of Mitsubishi Electric America, which is a wholly owned subsidiary of MELCO.

4.

The parties do not dispute jurisdiction and venue. The Court has jurisdiction of the parties and the subject matter of the pleadings under 28 U.S.C. § 1338

and venue is proper in this district under 28 U.S.C. § 1400(b).

**B. The Patents in Suit**

5.

United States Patent No. 4,656,605 ("605 patent") entitled "Single In-line Memory Module" issued to Wang Laboratories, Inc. as assignee from James E. Clayton on April 7, 1987 TX 3.

6.

United States Patent No. 4,727,513 ("'513 patent") entitled "Single-In-Line Memory Module" issued to Wang Laboratories, Inc. as assignee from James E. Clayton on February 23, 1988. TX 1. The claimed inventions in the '605 and '513 patents are referred to as single in-line memory modules or SIMMs.

7.

The application which matured into the '605 and '513 patents ("SIMM patents") was filed on September 8, 1983. TX 4.

**C. Procedural Background**

8.

Wang filed its complaint in the United States District Court for the Eastern District of Virginia on June 4, 1992 against MELA, alleging that MELA's X9 memory modules infringe claim 1 of Wang's '605 patent and claims 1 and 2 of Wang '513 patent. Wang claimed that MELA manufactures, sells and uses infringing SIMMs in the United States and also imports infringing SIMMs manufactured by its Japanese parent

company for sale and use in the United States.[1] MELA counterclaimed for antitrust violations and various torts.

9.

On or about July 17, 1992, upon the defendants' motion, Wang's patent action was transferred to the Central District of California pursuant to 28 U.S.C. § 1404. On August 6, 1992, the action was docketed by this Court (the "*Wang v. MELA* action").

10.

On July 17, 1992, MELA and MELCO (collectively "Mitsubishi") jointly filed an action against Wang in this Court, captioned *Mitsubishi Electric Corporation and Mitsubishi Electronics America, Inc. v. Wang Laboratories, Inc.. et al.*, CV 92 3891 JGD (the "*MELCO v. Wang* action"). MELA and MELCO sought a declaration of non-infringement of the SIMM patents, and alleged federal and state antitrust and unfair competition claims against Wang. MELA separately asserted a claim for tortious interference with prospective economic advantage. MELCO alleged independent patent infringement claims against Wang. Wang counterclaimed against MELCO alleging that MELCO's X9 memory modules infringe claim 1 of Wang's '605 patent and claims 1 and 2 of Wang's '513 patent.

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[1] Wang's complaint also names NMB Technologies, Inc. ("NMB") as a defendant. However, all claims between Wang and NMB have since been settled and dismissed.

11.

On August 18, 1992, Wang filed for bankruptcy under Chapter 11. In accord with the automatic bankruptcy stay, the Court stayed the *MELCO v. Wang* action on August 28, 1992. MELCO and MELA then moved the bankruptcy court to lift the automatic stay so they could prosecute to judgment their various claims against Wang. The bankruptcy court lifted the stay on MELA and MELCO's claims to the extent they relate to Wang's SIMM patents, but refused to lift the stay on MELCO's independent patent claims, observing that MELCO could file a separate action if it wished to pursue post-petition patent infringement claims against Wang.

12.

On July 20, 1993, the Court granted Wang's motion for partial consolidation of the instant action with the first through sixth causes of action in the *MELCO v. Wang* action, leaving only MELCO's independent patent infringement claims against Wang to be prosecuted separately. *Wang Laboratories Inc. v. Mitsubishi Electric America, Inc.*, 29 U.S.P.Q. 2d 1481, 1505 (C.D.Cal. 1993). Also on July 20, the Court granted Wang's motion for separate trials of its patent infringement claims and MELA's affirmative antitrust and tort claims, but declined to stay discovery on MELA's affirmative claims.

13.

On May 17,1994, the Court granted summary judgment in favor of Mitsubishi that the prosecution history of the '605 patent estopped Wang from alleging infringement by Mitsubishi's X9 memory modules.

14.

Wang's claims that Mitsubishi's X9 memory modules infringe claims 1 and 2 of the '513 patent, and Mitsubishi's non-antitrust-related affirmative defenses as to the validity and enforceability of the '605 patent were tried to a jury during Phase I of the trial. The jury found that Mitsubishi's accused X9 memory modules literally infringed claims 1 and/or 2 of Wang's '513 patent. The jury did not find Mitsubishi's infringement was willful. The jury found that Mitsubishi failed to prove that the SIMM patents are invalid because either the invention was obvious, the patents failed to disclose the best mode, James Clayton did not invent the claimed subject matter, or James Clayton was not the sole inventor of the claimed subject matter. The jury found that Wang had licensed the '513 patent to Mitsubishi. The jury found that Wang did not waive its rights in the '513 patent. The jury's also made advisory findings in favor of Wang on Mitsubishi's equitable defenses of inequitable conduct, equitable estoppel, laches, patent misuse and unclean hands. The Court must determine from the evidence whether the Mitsubishi parties sustained their burden of proof at trial on these equitable defenses.

## D. Inequitable Conduct

15.

Mitsubishi contends that the SIMM patents are unenforceable based on statements in the declarations of Messrs. Daniel Devlin, a Wang employee who worked with the inventor, James E. Clayton, the inventor, and the remarks prepared by Mr. Kenneth Milik, Wang's patent agent, submitted to the Patent and Trademark Office ("PTO") during Wang's prosecution of the SIMM patents. The Court finds that Mitsubishi

failed to prove by clear and convincing evidence that Wang engaged in inequitable conduct before the PTO.

**16.**

As the basis for its inequitable conduct assertions, Mitsubishi relies on the following statement by Mr. Devlin in his May 14, 1986 declaration submitted to the PTO during Wang's prosecution of the SIMM patents: "Since the development of the SIMM, several manufacturers have copied it exactly and now include it in their product lines." TX 4A at 87, ¶ 4. Mitsubishi does not dispute the fact that others copied the SIMM exactly. Mitsubishi admits that it manufactured SIMMs "reflecting Wang's design." TX 1529, ¶ 2. There is no allegation and the Court finds no evidence that this statement was false information.

**17.**

Mitsubishi contends that Mr. Devlin's statement was misleading because Wang did not disclose that it had been encouraging manufacturers to adopt Wang's design. However, the Court finds that Wang did disclose to the PTO that it had encouraged others to adopt the claimed memory module. Further, the Court finds no evidence that any information as to Wang's encouragement of others establishes a *prima facie* case of unpatentability, or refutes or is inconsistent with any position taken by Wang.

**18.**

In the preliminary amendment, Mr. Milik stated: "James E. Clayton and Wang Laboratories encouraged others to adopt the claimed memory module and they did, not just for Wang Laboratories but for their own catalogues." TX4A at 73.

19.

In his May 15, 1986 declaration, Mr. Clayton stated: "After the subject invention was made, I engaged in promotional activities to interest prospective manufacturers." TX 4A at 76, ¶ 3.

20.

The Court finds that Wang has proved a nexus between the merits of the claimed invention and commercial success. Dr. Frey, an expert on computers and packaging of electronic computer components, prepared a chart (TX 2514) which summarized the advantages of the SIMM and testified that the SIMM had "taken off like a rocket since it was introduced, and is in almost every personal computer today" because the SIMM enables memory expansion in computers "real fast, real easy, real cheap" and without redesigning the computer. Frey, Tr. 2524, 2521-24; TX 2514. Dr. McCarthy, an economics expert, also testified that customer demand for SIMMs is based in large part on the natural advantages of the SIMM. McCarthy, Tr. 1358-60, 1398-1401. There was no evidence that Mitsubishi decided to copy the SIMM for any reason other than its superiority over other modules. *See e.g.*, TX 1529 ¶¶ 2, 9, 12.

21.

Mr. Devlin testified that he believed that the manufacturers copied Mr. Clayton's invention exactly. Devlin, Tr. 833-35. The Court finds that Mr. Devlin had no intent to mislead the PTO.

22.

As a further basis for its inequitable conduct contention, Mitsubishi relies on another statement by Mr. Devlin in his declaration: "The subject invention as

presently claimed is in the final stages of being adopted as a standard by the Joint Electronic Design Engineering Council, ("JEDEC") Committee JC-11. Prior to Mr. Clayton's invention, JEDEC provided no standards classification for hybrid modules of any type. The industry's widespread acceptance of Mr. Clayton's invention has forced JEDEC to reconsider and to finally implement a new classification." TX 4A, p. 87, ¶ 6.

**23.**

James Clayton testified that he made his first presentation to JEDEC in September, 1983, at which time, JEDEC did not have any standards classification for hybrid modules, such as the SIMM. Clayton Tr. 635-636.

**24.**

The evidence shows that by 1986, a number of companies were offering SIMMs for sale. TX 4A, pp. 87-107; TX 2207, 2115, 2116, 2117, 2118, 2119, 2120; Clayton, Tr. 649-653. The evidence shows that in 1986 the SIMM was already a *de facto* standard, TX 4A, pp. 87-107; TX 2123; Clayton, Tr. 642-643 as recognized by Dr. Taniguchi, Tr. 1977-78. Following the industry's acceptance of Clayton's SIMM invention, JEDEC published two standards relating to the SIMM: the JC-11 committee adopted outline standards and the JC-42.3 committee adopted a pinout standard. TX 476; McCarthy, Tr. 1361-1363; Brown, Tr. 2464-2474.

**25.**

Although Mitsubishi argues Mr. Devlin's statement was misleading because JEDEC in early 1984 set up a task force to consider standardization of memory modules, Mr. Kenneth McGhee, secretary of the JC-42.3 committees, testified by deposition there

was no basis for anyone to know ahead of time whether the proposed standard would pass. Brown, Tr. 2098-2099; *see* Brown, Tr. 2082-2083. JEDEC's actions in 1984 do not demonstrate that Mr. Devlin's statement was incorrect.

**26.**

Mr. Devlin testified that he believed that his statement was correct, and he had no intent to mislead. Devlin, Tr. 837-839.

**27.**

The evidence shows that Mr. Devlin's statements were correct and that Mr. Devlin had no intent to mislead. The Court finds that Mitsubishi has failed to sustain its burden of proving by clear and convincing evidence that Wang engaged in inequitable conduct on the basis of Mr. Devlin's statements.

**28.**

To support its inequitable conduct assertions, Mitsubishi also relies on a statement by Mr. Clayton in his May, 1986 declaration submitted to the PTO during Wang's prosecution of the SIMM patents: "Memory chips encased in plastic leaded chip carriers were not old and well known at the time I conceived my invention." TX 4A, pp. 75-76.

**29.**

Mr. Clayton provided extensive support for his statement. Both Mr. Clayton and Mr. Devlin testified that Mr. Clayton conceived of his invention in November, 1982. Devlin, Tr. 822-823; Clayton, Tr. 536-537. Mr. Clayton testified about an October 22, 1982, quotation from Texas Instruments ("TI"), the inventor of the plastic leaded chip carrier, to Wang

informing Wang that the 64K plastic leaded chip carrier DRAM would not be available until the second quarter of 1983. TX 2126; Clayton, Tr. 617-618. In April, 1983, the prototype plastic leaded chip carriers for DRAMs were unreliable, falling apart due to stress cracks. TX 2125; Clayton Tr. 618. In June, 1983, TI was still revising the plastic leaded chip carriers for DRAMs and informed Mr. Clayton that it would produce the device using prototype tooling. TX 8, pp. 51, 64; Clayton, Tr. 618-19. At the June, 1983 press panel interview, Mr. Clayton repeatedly described the devices as brand new parts. Clayton, Tr. 619; *e.g.*, TX 500, p. 18. In July, 1983, Mr. Clayton received an analytical report documenting problems with the plastic leaded chip carriers. TX 2125; Clayton, Tr. 620. As of August, 1983, TI had not yet internally qualified the devices. TX 377; Clayton, Tr. 620. Finally, Dr. Charles Hutchins, a former TI employee, testified to a 1984 memorandum he wrote (TX 2129) detailing that TI did not qualify the devices and begin full production until the third quarter of 1984. Hutchins, Tr. 2478-80; *see* Clayton, Tr. 620.

**30.**

Contrary to Mitsubishi's assertions that he attempted to obscure the prior art status of the TI DRAM devices, in his May 15, 1986 declaration, Mr. Clayton stated: "Texas Instruments Incorporated is the recognized inventor of plastic leaded chip carriers as evidenced by U.S. Patents No. 4,465,898 and 4,463,217." TX 4A at 75, ¶ 3.

**31.**

The Court, therefore, finds that Mr. Clayton disclosed sufficient information showing the plastic leaded chip carrier as prior art and his statements were

directed toward whether the prior art would teach the use of the devices in his invention.

32.

Contrary to Mitsubishi's assertion, the Court finds that the status of plastic leaded chip carrier DRAMs was relevant under 35 U.S.C. §§ 102 and 103 to the issue of whether the prior art would provide any teachings as to the use of the device to produce Clayton's claimed invention.

33.

Mr. Clayton testified that he believed that his statement was correct and he had no intent to deceive the PTO. Clayton, Tr. 612, 804-805.

34.

The evidence shows that Mr. Clayton's statement was correct and that he had no intent to mislead. The Court finds that Mitsubishi has failed to sustain its burden of proving by clear and convincing evidence that Wang engaged in inequitable conduct on the basis of Mr. Clayton's statement.

35.

Finally, Mitsubishi also relies on a statement by Wang's patent agent, Kenneth Milik in his June, 1986 remarks on the proposed amendment: "In close cases such as this case, in which a large number of elements have been uniquely put together, the question of exact copying must be given great weight. If the claim combination of elements were simply a design choice, exact copying should not have occurred to any widespread degree." TX 4A, p. 73.

36.

Mitsubishi contends that this statement is misleading because Wang failed to disclose Wang's encouragement of SIMM use. As previously stated, both Mr. Milik and Mr. Clayton disclosed Wang's encouragement. Further, because the evidence shows a nexus between the SIMM's commercial success and the claimed invention, the Court finds that whether or not Wang encouraged other companies to manufacture SIMMs is irrelevant to the issue of inequitable conduct.

37.

Mitsubishi relies on another statement by Mr. Milik: "The technique of encasing RAM chips in PLCC's did not in fact occur until mid-1983." TX 4A, p. 72.

38.

The only evidence regarding this statement is Mr. Clayton's testimony, that he believed "it was a correct statement" because the PLCC DRAM was a "prototype package in development." Clayton, Tr. 804.

39.

Mr. Milik did not testify at trial. However, Mr. Milik had given extensive deposition testimony. In spite of the availability of his deposition testimony, Mitsubishi did not introduce any evidence showing Mr. Milik's statements to be false or that he had an intent to mislead the PTO. The Court finds that Mitsubishi has failed to sustain its burden of proving by clear and convincing evidence that Wang engaged in inequitable conduct on the basis of Mr. Milik's statements.

## E. Equitable Estoppel

### (i) JEDEC

**40.**

Mitsubishi argues that Wang is equitably estopped from enforcing its SIMM patents due to Wang's failure to inform JEDEC, an industry standards organization, of the existence of the then pending application for the SIMM patents. However, the Court finds that Wang's omission was neither misleading, nor "caused" JEDEC to adopt standards relating to the SIMM.

**41.**

Mitsubishi has presented no evidence of bad faith on Wang's part or the existence of a duty to disclose pending patent applications to JEDEC. Wang filed its SIMM patent application on September 2, 1983. TX 4A. In August, 1986, JEDEC published 13 different pin assignments as standards, only one of which applied to X9 modules like the SIMM. TX 476; Clayton, Tr. 647-649. The evidence fails to show that JEDEC had a policy regarding the disclosure of pending patent applications from 1983 to 1986. Additionally, there is no evidence that JEDEC made any efforts to inform those making proposals of any policy requiring disclosure of patents or pending patent applications and no evidence that JEDEC's policy required disclosure of pending patent applications. *Compare* Clayton, Tr. 637, 762-763; Hutchins, Tr. 2486-88; McGhee, Tr. 2104-05; Brown, Tr. 2468.

**42.**

Mr. Reese Brown, a JEDEC participant, testified by deposition that he never discussed any patent policy

with JEDEC committee members or non member participants. Brown, Tr. 2468. Dr. Hutchins testified that in 1984, TI did not disclose its pending patent application on a product for which it proposed standardizing because "it was not required." Hutchins, Tr. 2486. In fact, Dr. Taniguchi, testified that Mitsubishi itself made no effort to disclose to JEDEC that it had filed a patent application relating to its ZIP design, for which it was seeking standardization. Taniguchi, Tr. 1051-53.

43.

The evidence does not support Mitsubishi's allegation that Wang was aware of JEDEC's alleged "sensitivity to patent issues as they affect proposals." None of the JEDEC witnesses, neither Mr. Brown, Mr. Jones, nor Mr. McGhee, recalled that Mr. Clayton was privy to any discussions on patent issues. *See* Brown, Tr. 2025; McGhee, Tr. 2102-04; Jones, Tr. 1580. Mr. Clayton testified he was not at any such discussions. Clayton, Tr. 760-761.

44.

Although Mitsubishi relies on an Electronic Industries Association Manual for Committee, Subcommittee, and Working Group Chairmen and Secretaries (TX 4540). Mr. McGhee testified that this document was specifically "for a [JEDEC] committee chairman." McGhee, Tr. 2086-87. There is no evidence that this document or its contents was provided to members or non-members making proposals to JEDEC. *Compare* Clayton, Tr. 637, 761-762; Hutchins, Tr. 2484-88.

45.

The Court finds that this Manual does not support Mitsubishi's estoppel claim. According to this Manual, JEDEC's only stated concern regarding patented items was its desire to have "a written expression from the patent holder that he is willing to license applicants under reasonable terms and conditions that are demonstrably free of any unfair discrimination." TX 4540 at 8. The evidence shows that following issuance of its SIMM patents, Wang in fact did enter into nondiscriminatory licenses at reasonable royalties. *See* TX 6000; McCarthy, Tr. 1352-53. The Court finds that Wang fully complied with the only relevant JEDEC policy cited by Mitsubishi.

46.

The testimony of Messrs. Rheese Brown and Kenneth McGhee, the principal witnesses relied upon by Mitsubishi, does not support Mitsubishi's claim. *See* Tr. 2086-88, 2091-92, 2473-74. For example, although Mr. Brown testified that JEDEC patent policy required disclosure of patent information, Tr. 2473, he did no identify any such written policy or testify that he informed those making proposals of a policy. Any inference as to the existence of such an informal policy is directly contradicted by JEDEC's notice in its module standards published in 1986. The notice states that the existence of a patent on a particular module was simply not a factor in the decision process:

> "*Recommended standards are adopted by JEDEC without regard to whether or not their adoption may involve patents* or articles, materials or processes. By such action, JEDEC does not assume any liability to any patent owner, nor does it assume any

> obligation whatever to parties adopting the JEDEC Standards of Publication."

TX 476, Notice Statement (emphasis added); Hutchins, Tr. 2487.

47.

The Court finds that Mitsubishi has failed to sustain its burden of proving by a preponderance of the evidence that Wang's actions at JEDEC were misleading.

48.

The Court finds that Mitsubishi's contention that Wang's actions "caused" JEDEC to adopt SIMM standards is not supported by the evidence.

49.

JEDEC adopted two SIMM standards: (1) JC-42.3 defining the SIMM pinout, and (2) JC-11 defining the packaging outline for the DRAMS and the module. *See* TX 476; Brown, Tr. 2464-66; TX 535. While Mr. Clayton testified that he participated in JC-42.3 meetings, *e.g.*, Clayton, Tr. 635-636, there is no evidence that he was involved with JC-11. Mr. Brown testified that IBM was the official sponsor of the SIMM packaging standard in JC-11. Brown, Tr. 2466.

50.

Mr. Clayton testified that when he initially proposed a SIMM pinout for JEDEC standardization in September, 1983, JEDEC reacted negatively. Clayton, Tr. 635-636. Mr. Clayton made a second presentation in September, 1984. Id at 639-640. By that time, as shown in TI's 1984 MOS Memory Data Book, TI already was offering the SIMM with Mr. Clayton's proposed pinout.

*Id.*; TX 2207. Thereafter, TI became the primary sponsor of the SIMM pinout proposal. Clayton, Tr. 640-643; TX 2123. However, JEDEC did not adopt the standard until IBM supported it. *See* Clayton, Tr. 644-47. By that time, in 1986, the testimony of Dr. McCarthy, Dr. Taniguchi and Mr. Clayton, and the various manufacturers' SIMM advertisements, demonstrate that the SIMM was a *de facto* standard because the computer industry had already recognized the SIMM as a valuable product. McCarthy, Tr. 1361-63; Taniguchi, Tr. 1976-77; TX 4A, pp. 87-107; TX 2123; Clayton, Tr. 642-643.

**51.**

The Court finds that Mitsubishi did not rely on either JEDEC's SIMM pinout and package outline standardization or Wang's conduct in entering into and continuing SIMM production.

**52.**

Dr. Taniguchi, then manager of MELCO's division regarding memory products, testified that when Mitsubishi made its decision to manufacture SIMMs, it knew that Wang's demand was already met from other sources and that Wang would not be a customer for its module. Taniguchi, Tr. 1038, 1977-78; *see* TX 1529. The Court finds that Mitsubishi would have made the decision to enter the market and to continue to manufacture SIMMs regardless of Wang's alleged conduct.

**(ii) Press Panel Interview**

**53.**

Mitsubishi relies on statements in a July, 1983 press panel interview by Wang. However, Dr.

Taniguchi testified that he had no knowledge prior to making his decision to manufacture SIMMs of the press panel interview or the articles about the SIMM written in 1983. Taniguchi, Tr. 1038-1040, 1974. Therefore, the Court finds that Mitsubishi cannot base its claim of estoppel on these events.

**(iii) Statements to Mitsubishi**

**54.**

Confirming the statements in his December 18, 1983 "overseas business trip reports," Dr. Taniguchi testified that in December 1983, he first met with Mr. Clayton. In that meeting they discussed whether Mitsubishi would manufacture 64K SIMMs. TX 1530, 1530A at 26/85; Taniguchi, Tr. 1034. Dr. Taniguchi testified that, at that meeting, there was no discussion concerning Mitsubishi's manufacture of the 64K SIMM for sale to anyone other than Wang. Taniguchi, Tr. 1040-42. Dr. Taniguchi testified that Mitsubishi decided not to manufacture 64K DRAMs, thus eliminating 64K SIMMs as a possible product. Taniguchi, Tr. 1034. There is no evidence that Wang and Mitsubishi discussed a 256K SIMM at that meeting.

**55.**

The evidence shows that in July, 1985, before Dr. Taniguchi had *any* further contact with Wang, Dr. Taniguchi made the decision to mass produce 256K SIMMs and signed the internal requisition papers authorizing mass production of 256K SIMMs. Taniguchi, Tr. 1032, 1034, 1976; TX 1529 at ¶ 9 and Ex. C. Dr. Taniguchi testified that Mitsubishi actually began production of 256K SIMMs in the third quarter of 1985. Taniguchi, Tr. 1037, 1899; TX 1444.

**56.**

The Court finds that Mitsubishi's decision to manufacture 256K SIMMs was not based on Wang's conduct. Dr. Taniguchi testified that Mitsubishi decided to make 256K SIMMs in July 1985 because Dr. Taniguchi thought SIMMs would be an industry standard:

> Q. But you recognized that before you made the decision in July of 1985 that this module had become accepted by the industry as a standard, and that they were selling and people were buying; isn't that correct?
>
> A. That's correct.
>
> Q. So by the time you sought formal approval, you believed that before JEDEC approval even occurred, that the 256K SIMM would be a standard part that people would buy and sell in this industry; correct?
>
> A. Yes, that's what I thought.
>
> Q. And when you talk about standard, you are not talking about the JEDEC standardization, you are talking about acceptance by major manufacturers in this industry, aren't you?
>
> A. That's correct.

Taniguchi, Tr. 1977-78; *see* Taniguchi, Tr. 1050-51.

57.

Dr. Taniguchi also testified that by July 1985, he "had become sufficiently convinced of the market for SIMMs, based upon continuing demand by Wang for large volumes of SIMMs, and upon demand by other large customers such as IBM . . ." TX 1529, ¶ 9 (emphasis added); Taniguchi, Tr. 1032, 1965-66, 1970. Dr. Taniguchi testified that he sought approval for the development and production of 256K SIMMs in response to this market. Taniguchi, Tr. 1032.

58.

By the time Mitsubishi entered the 256K SIMM market in 1985, Dr. Taniguchi testified that he recognized that Wang did not need Mitsubishi as a supplier:

> "Wang's demand, the most recent demand was already satisfied, and also Wang had modules supplied from various sources, and did no longer need supplies from Mitsubishi anymore."

Taniguchi, Tr. 1038.

59.

There is no evidence that Mitsubishi developed the 256K PLCC DRAM or 256K SIMMs based on Wang's encouragement.

60.

By July, 1985, the evidence shows that Wang did not consider Mitsubishi as a possible SIMM supplier. Clayton, Tr. 622-623, 625-627; TX 2127, 2124, 2128. Mr. Clayton, who did not list Mitsubishi as a possible supplier on his 1984 SIMM development report (TX

21278), testified that Mitsubishi "had not expressed any interest in wanting to build SIMMs for us [by the end of 1984]." Clayton, Tr. 623. In March, 1985, as shown on Mr. Clayton's memorandum about "256K SIMM sourcing status," there were a number of potential suppliers. TX 2128. Mr. Clayton, testified that Wang considered Mitsubishi "just one of the pack. By that point in time, [Wang] had a number of companies coming to [Wang] wanting Wang to evaluate their SIMMs." Clayton, Tr. 627.

61.

The evidence shows that after Dr. Taniguchi obtained formal approval to manufacture SIMMs, in July, 1985, before Dr. Taniguchi met with Mr. Clayton in August 1985. Taniguchi, Tr. 1045. Additionally, at this time, Mitsubishi had not discussed with Wang manufacturing SIMMs for sale to anyone but Wang. Aidala, Tr. 2011-12; Taniguchi, Tr. 1049, 1977, 1983; Clayton, Tr. 654.

62.

Dr. Taniguchi testified that Wang did not qualify Mitsubishi's 256K SIMMs in 1985. Taniguchi, Tr. 1048. The evidence shows that Mitsubishi sold over $4 million worth of SIMMs to customers other than Wang from 1985-1986 and did not sell SIMMs to Wang until 1987. TX 2312; McCarthy Tr. 1350-51.

63.

The Court finds that Mitsubishi failed to sustain its burden of proof by a preponderance of the evidence that its entry into SIMM production was in reliance upon actions of Wang. The Court finds that Mitsubishi's entry into SIMM production was a business judgment of its own.

64.

The Court finds that Mitsubishi failed to sustain its burden of proof by a preponderance of the evidence that it continued to produce SIMMs in reliance on Wang. The evidence shows that the most important factor which led Mitsubishi to increase SIMM production was the expanding market, *e.g.*, McCarthy, Tr. 1363-1364, 1397, as evidenced by Mitsubishi's increasing sales and profits from 1985 through 1990, when it received Wang's notice of infringement. TX 2300, 2301, 2316, 2183, 2308, 2306, 2314, 2312.

65.

As evidence of reliance, Mitsubishi contends that to accommodate Wang, Mitsubishi changed its design to mount the capacitors and the memory chips on the same side. However, the evidence shows that Mitsubishi's SIMM was manufactured to Mr. Clayton's early design. Mr. Clayton identified Wang's first prototype SIMM (TX 2225), manufactured in 1983, which has decoupling capacitors on the opposite side from the DRAMs. *See* Clayton, Tr. 565-566; TX 2225. Mr. Clayton also testified:

> "I recall from my notes in my notebook that I had provided a sample module to Mitsubishi along with detailed drawings and they essentially copied it exactly."

Clayton, Tr. 630; *See* Taniguchi, Tr. 1884-85.

66.

The evidence does not show that Mitsubishi made a SIMM design change to accommodate Wang. Dr. Taniguchi's testimony that the design change was to accommodate Wang (Taniguchi Tr. 1970), is

contradicted by his other testimony. Dr. Taniguchi admitted that as of July, 1985, Wang no longer needed Mitsubishi as a supplier. Taniguchi, Tr. 1038. As of July, 1985, he anticipated selling the SIMM to IBM. Taniguchi, Tr. 1031-32; TX 1529, ¶ 9. In his declaration, Dr. Taniguchi testified that by October 1985 because "the demand for [the SIMM] by Wang, IBM and others was confirmed," he requested approval "to develop and produce a faster model of the 256K SIMM." TX 1529, ¶ 12. There is no evidence that Wang was purchasing products from Mitsubishi in 1985.

67.

Additionally, the Court finds no evidence that this design change involved any expense or higher production cost. The evidence shows all the SIMMs being offered for sale by others had decoupling capacitors mounted on the same side as the memory chips. *See* TX 4A, pp. 90, 93, 96, 101, 102. The Court finds that Mitsubishi would have made the change to be competitive.

68.

The Courts finds no evidence to support Mitsubishi's contention that Mitsubishi, in fact, would have moved to an "alternative design" had it known of Wang's "patent claims in 1983, 1986, or even as late as 1987 when the first patent issued."

To support this contention, Mitsubishi relies on the following testimony of Dr. Taniguchi:

> Q. Was it technically possible to avoid the use of Wang's patent had you known about it?

> A. There are various ways to think about that. One would have been not to use 30 pins, but say to use 32 or 28 pins. Another approach might have been to use a different arrangement of the memory.

Taniguchi, Tr. 1970-71. However, the Court does not find that testimony to be evidence of reliance. First, Dr. Taniguchi testified that Mitsubishi decided not to manufacture SIMMs in 1983. Taniguchi, Tr. 1034. Second, the evidence shows that in 1986, there were many alternative designs of memory modules with different number of pins. In addition to a standard pinout for Mr. Clayton's SIMM, the 1986 JEDEC Standard 21-A-1 includes pinout and size standards for twelve other modules. TX 807, 878; Jones, Tr. 1596-98; Clayton, Tr. 647-649. The Court finds that in 1986, Mitsubishi, a multi-billion dollar company, could have chosen to manufacture any or all of these twelve other memory modules in conformance with the JEDEC Standard 21-A-1. As there is no evidence that Mitsubishi chose to manufacture these other modules, the court concludes that the reason for Mitsubishi's decision was, as Dr. Taniguchi recognized, there was an increasing demand for Mr. Clayton's SIMM. TX 1529, ¶¶ 9, 12; McCarthy, Tr. 1363-64, 1397.

**70.**

For the reasons stated above, the Court does not find credible Dr. Taniguchi's testimony that Mitsubishi would not have made the SIMM as a standard catalog product unless there was no license fee involved. *See* Tr. 1967.

71.

The Court finds no evidence to support Mitsubishi's contention that it had no alternative to manufacturing infringing SIMMs after 1987 because it was locked into a standardized module design. The evidence shows that the JEDEC standards may be followed without using the claimed invention. Jones, Tr. 1598-1600; McCarthy, Tr. 1361-63; TX 1, 476. The standard defines the electrical pin assignment which is not claimed by the SIMM patents. *See* TX1; McCarthy, Tr. 1361-63.

72.

The Court finds that Mitsubishi failed to sustain its burden of proving reliance by a preponderance of the evidence on Wang's conduct.

73.

The Court finds that Mitsubishi failed to sustain its burden of proof by a preponderance of the evidence that it would suffer either economic or evidentiary prejudice if Wang is permitted to enforce its patents.

74.

The Court finds no evidence of a nexus between Wang's delay in notifying Mitsubishi of its patent claims and Mitsubishi's decision to invest in equipment and expand SIMM production. The Court finds that Mitsubishi would have expanded its SIMM business no matter what Wang did or did not do. McCarthy testified that SIMMs a natural product extension for anybody who makes DRAMs such as Mitsubishi, and testified at length about how profitable Mitsubishi's SIMM business has been. McCarthy, Tr. 1391, *see also* TX 2300, 2301, 2316, 2183, 2308, 2306, 2314, 2312; McCarthy Tr. 1350-51, 1363-64, 1397. From the outset,

Dr. Taniguchi anticipated IBM as a principal customer and recognized that the SIMM was an industry standard. Taniguchi, Tr. 1032, 1965, 1970, 1977-78. The court finds no credible evidence that Mitsubishi would not have expanded its SIMM business had Wang notified Mitsubishi of its patent claims at any time from 1985 until 1990.

There is also no evidence that Mitsubishi took action to decrease its SIMM business once apprised of Wang's patent claims. To the contrary, the evidence shows that Mitsubishi acted to maintain its SIMM business. There is no evidence of any correlation between Mitsubishi's SIMM business and another product's sales.

75.

The evidence shows that from April 1985 through March 1994, Mitsubishi's profits on SIMMs ranged from $88 million to $166 million (on sales of $361 million). McCarthy, Tr. 1337-38, 1346-48; TX 2302; *see* McCarthy, Tr. 1356-58, 1366-67, TX 2183, 2303, 2306, 2314. From 1987 through 1991, Mitsubishi's profit margins ranged from 40% to over 60%. TX 2306, 2183. Dr. McCarthy concluded there would be no economic harm to Mitsubishi from enforcing the patent. McCarthy, Tr. 1376. The Court accepts Dr. McCarthy's conclusion.

76.

The evidence shows that there would not be a substantial change in the economic position of Mitsubishi if Wang is allowed to enforce its patent. McCarthy, Tr. 1368. First, there would be no royalties due for sales prior to the December, 1989 notice of infringement. 35 U.S.C. § 287; McCarthy, Tr. 1369-1370.

Second, as to future damages, Mitsubishi had been offered a license in the SIMM patents when noticed by Wang. *See* Shanahan, Tr. 938; TX 769. Mitsubishi has demonstrated no significant harm to it in paying 3-4% royalties out of a profit stream ranging up to 60%. McCarthy, Tr. 1369-70. Alternatively, if Mitsubishi chose to discontinue selling SIMMs, there would be no significant threat to its economic position, as Mitsubishi has admitted in its 1993 annual report. McCarthy, Tr. 1367-69; TX 2036. SIMMs represent only 3.9% of Mitsubishi America's sales and 0.4% of Mitsubishi Japan's sales. McCarthy, Tr. 1372-74; TX 2300, TX2301.

77.

The evidence does not support Mitsubishi's argument that it will suffer economic prejudice because it made a substantial investment in Wang's design and increased its sales of memory modules based on that design between 1986 and the present. Dr. Taniguchi testified that following his December 1983 meeting with Mr. Clayton, Mitsubishi was not going to manufacture the 64K SIMMs. Taniguchi, Tr. 1897. Because Mitsubishi did not have vapor phase soldering technology used to manufacture SIMMs, Dr. Taniguchi testified "it was necessary to undertake a study of the development of that kind of technology." *Id.* at 1897-98. Dr. Taniguchi testified from his 1983 discussion with Mr. Clayton, "it appeared that a substantial demand could be expected from Wang, and so I decided it would be good to develop this." *Id.* at 1898.

78.

As previously discussed, the Court finds that in July, 1985, when Dr. Taniguchi sought formal approval to manufacture the 256K SIMM, Mitsubishi was not a potential or necessary SIMM supply source for Wang.

Taniguchi, Tr. 1038; Clayton, Tr. 622-623, 625-27; TX 2127, 2124, 2128. Dr. McCarthy testified that Mitsubishi proceeded to make an approximately $1 million capital investment in equipment to make surface mount modules and increased SIMM production to meet market demand. McCarthy, Tr. 1374-76; TX 2300. The evidence shows that by 1990, Mitsubishi's SIMM sales were over $55 million. See TX 2300.

**79.**

The evidence shows that Mitsubishi would not lose its SIMM capital investment costs by enforcement of Wang's patents. Even if Mitsubishi were enjoined from infringing Wang's SIMM patent, the Court finds that Mitsubishi could continue manufacturing SIMMs for sale to Wang's licensees and to customers outside the United States. E.G. TX 2036; 2316. McCarthy Tr. 1380-90. For example, the evidence shows that IBM, a Wang licensee, was Mitsubishi's top American customer in 1987 and 1988. TX 2312; TX 6000. Additionally, Mitsubishi could still use its equipment to manufacture X8 memory modules. *See* McCarthy, Tr. 1372-73; TX 2300.

**80.**

Dr. McCarthy also testified that Mitsubishi's failure to recoup the $500,000 depreciated value in investment costs would not threaten its economic position. McCarthy, Tr. 1374-76. As there is no contrary evidence, the Court accepts Dr. McCarthy's conclusion.

**81.**

The Court finds that Mitsubishi would have continued to expand its business, as it has done following notice of infringement, no matter when it

learned of Wang's patent rights. *See e.g.*, TX 2300, 2301, 2314. There is no credible evidence to the contrary.

**82.**

The Court finds that Mitsubishi failed to sustain its burden of proof that it would suffer evidentiary prejudice by enforcement of Wang's patents.

**83.**

Mitsubishi argues it has suffered prejudice because of (i) the alleged loss of Mr. Clayton's 1984-85 day calendars, (ii) the alleged loss of Ronald Burley's, another Wang employee, alleged notebooks, and (iii) the death of Mr. Tarpley, an employee of Comp Rep Associates. Although Mr. Clayton's 1984 and 1985 day calendars are missing, he testified that he did not write anything of importance in his day calendars and any significant information for that period is in his notebook or other records. Clayton, Tr. 739-740. Mitsubishi presented no evidence to the contrary. Mr. Clayton testified he did not recall whether he actually kept a notebook in 1985 because "we had reached a point in the development of the SIMM module that covered all of the major events. . . " Clayton, Tr. 816. The Court finds no evidence that Mr. Burley's engineering notebook contained any relevant information. The Court finds no evidence that Mr. Tarpley was an indispensable witness or had unique relevant personal knowledge. Mr. Tarpley was an employee of CompRep Associates, not of Mitsubishi. Pinto, Tr. 1992. Mitsubishi has the memoranda received from Mr. Tarpley. *Id.* Further, there is no evidence that Mr. Tarpley died prior to this litigation such that Mitsubishi was unable to preserve his testimony by deposition.

84.

The Court also finds that the equities merit a finding in favor of Wang. The evidence shows that from the time Wang noticed Mitsubishi of infringement, Wang has wanted to enter into a license, as it has with the rest of the semiconductor industry. Wang is seeking from Mitsubishi is a reasonable royalty on past and future sales of infringing SIMMs.

85.

The Court finds that it would be inequitable to estop Wang from enforcing its patent against Mitsubishi and give Mitsubishi a competitive advantage over the rest of SIMM manufacturers. Mitsubishi is a multi-billion dollar company which has enjoyed multi-millions of dollars of profits on its SIMM sales.

F. Laches

86.

The Court finds that Mitsubishi failed to sustain its burden of proof by a preponderance of the evidence that: (1) Wang delayed filing suit for an unreasonable and inexcusable length of time from the time Wang knew or reasonably should have known of its claim against Mitsubishi and (2) the delay operated to the prejudice or injury of Mitsubishi.

87.

As described above, only Mitsubishi's infringement of the '513 patent is at issue in this proceeding. The '513 patent issued on February 8, 1988. TX 1. The evidence shows that Wang's delay in filing suit was justified. *See* TX 4697. Mr. Shanahan, Wang is patent counsel at the time, testified that in 1988, after

the '605 and '513 patents issued, Wang conducted an investigation to confirm its beliefs that its patents were valid and infringed. Shanahan, Tr. 924-925, 953-954. Mr. Edward Grayson, Wang's vice president and general counsel at the time, testified that from that investigation, Wang concluded that its SIMM patents were valid and infringed by a number of very large foreign companies. Grayson, Tr. 863-864. Both Mr. Grayson and Mr. Shanahan testified that Wang, however, was not financially capable of starting an enforcement proceeding until the end of 1989. Grayson, Tr. 870-871; Shanahan, Tr. 954-956.

88.

The evidence shows that in December, 1989, Wang sent out notice letters to alleged infringers, including Mitsubishi. Grayson, Tr. 871; Shanahan, Tr. 932; TX 1681. Mr. Shanahan testified that from the outset, Wang was looking to license everyone, not to put SIMM manufacturers out of business. Shanahan, Tr. 929, 2076.

89.

The evidence shows that Mitsubishi did not respond substantively to Wang's notice letter until almost one year later in December, 1990. Shanahan, Tr. 932-33; TX 410. Mr. Shanahan testified that although Wang thought the letter was nothing more than a delaying tactic, Wang responded in January, 1991, proposing a meeting in February, 1991. Shanahan, Tr. 933-934; TX 1910. Mr. Shanahan also testified that because Mitsubishi failed to respond to Wang's proposal for a meeting, Wang did not immediately send Mitsubishi a draft license agreement. Shanahan, Tr. 936.

**90.**

Mr. Grayson testified that because the notified companies did not express an interest in licensing, Wang decided to commence litigation. Grayson, Tr. 871-872. Wang first sued NEC and Toshiba in the United States District Court for the Eastern District of Virginia in October, 1991. The case was tried in the summer of 1991, resulting in a favorable jury verdict for Wang. The court enjoined NEC and Toshiba from further infringement. Grayson, Tr. 872-873.

**91.**

After the Federal Circuit refused to stay the injunction issued against NEC and Toshiba, the evidence shows that in October, 1991, Wang notified all accused infringers, including Mitsubishi, of the results of *Wang v. Toshiba* and offered each and every one a license. Grayson, Tr. 873; Shanahan, Tr. 936, 2061-62, 2065-66; TX 768. Wang informed Mitsubishi that it was prepared to bring litigation if they could not reach a license. Shanahan, Tr. 936-937; TX 768.

**92.**

In January 1992, Mitsubishi responded (TX 767) after which time Wang sent Mitsubishi a draft license agreement (TX 769). Shanahan, Tr. 938, TX 608. Mr. Shanahan testified that although Mitsubishi did not respond, Wang continued to try to negotiate a license. Shanahan, Tr. 939-941; TX 3513.

**93.**

Mr. Grayson testified that because Wang, still did not have the resources to pursue simultaneous federal court litigation against numerous infringers, Wang requested the International Trade Commission ("ITC") to commence an investigation into the activities

regarding SIMMs of a number of companies, including Mitsubishi; the ITC commenced the investigation in February, 1992. Grayson, Tr. 874, 896-897. The evidence shows that Wang then negotiated SIMM patent licenses with a number of foreign SIMM manufacturers, including all respondents named in the ITC investigation, except for Mitsubishi and NMB. Grayson, Tr. 875-876; Shanahan, Tr. 926-928; *see* TX 6000.

**94.**

Mr. Shanahan testified that Wang then brought this action in June, 1992 against NMB and Mitsubishi in order to attempt to obtain complete relief. Shanahan, Tr. 931-932. In contrast to district court, the ITC can not award money damages nor enjoin domestically manufactured products. *Id.* Wang was concerned that in the event of an ITC exclusion order, Mitsubishi would avoid the order by shifting production from Japan to its North Carolina facility. Shanahan, Tr. 931-932.

**95.**

The Court finds that Mitsubishi did not prove that Wang's delay was unreasonable and inexcusable. The Court finds that Wang proved its delay was justified.

**96.**

As previously discussed, Mitsubishi failed to sustain its burden of proving by a preponderance of the evidence that it has been materially prejudiced by Wang's delay.

## G. Patent Misuse

**97.**

The Court finds no evidence that Wang improperly attempted to extend the scope of its SIMM patents and there is no evidence that any of Wang's actions had an anti competitive effect. Rather, the evidence shows that Wang has only sought to enforce those rights granted to it by its valid patents.

**98.**

As evidence of misuse, Mitsubishi relies on Wang's receipt of royalties on three pack and lateral SIMMs. However, the evidence shows that Wang's infringement claims and royalty receipts were based on a jury verdict affirmed by a district court judge that its SIMM patents were valid, enforceable and infringed by three versions of SIMMs: classics, three packs, and laterals. Grayson, Tr. 872-873; Shanahan, Tr. 937, 2061-62; *e.g.*, TX 768.

**99.**

In May, 1993, the Federal Circuit affirmed the findings that Wang's SIMM patents were valid, enforceable and infringed by classic SIMMs, but reversed the findings that three pack and lateral SIMMs were infringing products. Shanahan, Tr. 2061, 2066. Mr. Shanahan testified that at that point, Wang notified its licenses they no longer had to pay royalties on three pack and lateral SIMMs. *Id.* The only evidence is that Wang enforced its patents in accordance with court decisions.

**100.**

Mitsubishi also relies on evidence that Wang did not inform Mitsubishi or JEDEC of its patent

application. The Court finds no evidence to support Mitsubishi's contention that the SIMM would not have enjoyed widespread popularity absent Wang's silence. The Court finds that Mitsubishi failed to prove that Wang's silence evidenced that Wang was impermissibly trying to broaden the scope of its later issued patents. The evidence shows that the rest of the industry has licensed Wang's SIMM patents. *See* TX 6000.

**101.**

The Court finds that Wang's actions had no anti-competitive effect. The evidence shows that Wang always offered licenses to infringers, (Grayson, Tr. 873; Shanahan, Tr. 929, 2076) and entered into nondiscriminatory licenses. *See* TX 6000, McCarthy, Tr. 1352-53. In contrast, the Court finds that allowing Mitsubishi to continue its royalty-free manufacture and sale of SIMMs in the competitive SIMM market (McCarthy, Tr. 1390) would be anti-competitive.

**H. Unclean Hands**

**102.**

The Court finds that Mitsubishi failed to sustain its burden of proof by a preponderance of the evidence Wang has engaged in an unconscionable act in attempting to enforce its SIMM patents against Mitsubishi.

**103.**

Although Mitsubishi relies on the press panel interview in June, 1983, the evidence shows that Mr. Clayton informed the press that he had submitted a patent disclosure form to Wang's patent legal office. Clayton, Tr. 590-591; TX 500 at 29. The Court finds that

Mr. Clayton had nothing more to disclose regarding patent issues because Wang did not file its SIMM patent application until September 9, 1983. *See* TX 4A. The Court finds that Wang's actions at the press panel interview were not unconscionable.

**104.**

Furthermore, the Court finds that Wang's statements at the press panel interview are irrelevant because Mitsubishi had no knowledge of this press interview or 1983 articles about the SIMM when it made its decision to manufacture SIMMs in July, 1985. Taniguchi, Tr. 1038-40, 1974.

**105.**

Mitsubishi also relies on the JEDEC standardization process. The Court finds that Wang's actions at JEDEC were not unconscionable. There is no evidence that Wang had a duty to inform JEDEC of its pending patent application. The evidence shows that Mitsubishi did not believe there was such a duty at that time: Dr. Taniguchi testified that in 1983 Mitsubishi made a proposal to JEDEC to standardize a product, but did not disclose that it had filed a patent application on that product. Taniguchi, Tr. 1051-53. Further, the evidence shows that the industry does not believe Wang subverted the standardization process as evidenced by the fact that many JEDEC members licensed Wang's SIMM patents. *Compare* TX 600 with TX 97, 1329, 1339.

**106.**

The Court also finds Wang's silence at JEDEC irrelevant because Mitsubishi did not prove a nexus between its SIMM manufacturing decision and JEDEC.

**107.**

The Court finds that Wang's silence to Mitsubishi was not unconscionable to justify precluding Wang from enforcing its patent against Mitsubishi. Also, the Court finds Wang's silence irrelevant because Mitsubishi proved neither the requisite nexus between Wang's silence and Mitsubishi's SIMM manufacturing decisions, nor that Mitsubishi would be harmed by enforcement of the SIMM patent.

**108.**

The Court finds that Wang's conduct was not unconscionable and Mitsubishi did not prove by a preponderance of the evidence that Wang entered the court with unclean hands.

### I. General

**109.**

All Conclusions of Law which are Findings of Fact are adopted as Findings of Fact.

## SUMMARY

For the foregoing reasons, the Court finds that Mitsubishi failed to prove its inequitable defenses of: inequitable conduct, equitable estoppel, laches, patent misuse and unclean hands.

## CONCLUSIONS OF LAW

### A. Jurisdiction and Venue

**1.**

This Court has subject matter jurisdiction of this matter under the provisions of 35 U.S.C. § 281 and 28

U.S.C. § 1338 (a). MELA's residence is in this district and Wang and MELCO, by constituting this action as plaintiff and counterplaintiff, respectfully, have submitted to the *in personam* jurisdiction of this Court. None of the parties dispute the jurisdiction of this Court.

2.

Venue is proper in this Court because both MELCO and MELA reside in this district. 28 U.S.C. §1400(b). The parties do not dispute that this district is the proper venue for this litigation.

**B. Inequitable Conduct**

3.

The Courts have held over the years that the relationship between a patent applicant and the examiner is one of trust and confidence requiring the highest standards of honesty and candor on the part of the applicant. *See Precision Instrument Mfg. Co. v. Automatic Maintenance Machinery Co.*, 324 U.S. 806 (1945); *Norton v. Curtiss*, 433 F.2d 779, 167 U.S.P.Q. 532 (CCPA 1970). This duty of disclosure and candor is codified in 37 C.F.R. § 1.56. The rule provides in part:

> (a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the

> Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section.

4.

Mitsubishi alleges that Wang's patents are unenforceable due to Wang's inequitable conduct. A finding of inequitable conduct requires proof by the standard of clear and convincing evidence of two elements: (1) the withholding of material information or the submission of false information, and (2) the intent to mislead the Patent and Trademark Office ("PTO"). *Halliburton Co. v. Schlumberger Technology Corp.*, 925 F.2d 1435, 1439 (Fed. Cir. 1991); *Kingsdown Medical Consultants v. Hollister, Inc.*, 863 F.2d 867, 872 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1067 (1989).

5.

The standard for materiality is as follows:

> Under this section, [37 CFR § 1.56] information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
>
> It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
>
> It refutes, or is inconsistent with, a position the applicant takes in

> Opposing an argument of unpatentability relied on by the Office, or
>
> Asserting an argument of patentability.

37 CFR § 1.56 (1993).

6.

"Materiality of an undisclosed reference does not presume an intent to deceive." *Halliburton*, 925 F.2d at 1442. "[A] finding that particular conduct amounts to 'gross negligence' does not of itself justify an inference of intent to deceive; the involved conduct, viewed in light of all the evidence, including evidence indicative of good faith, must indicate sufficient culpability to require a finding of intent to deceive." *Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d at 876. "An applicant's conduct in its entirety must 'manifest [ ] a sufficiently culpable state of mind to warrant a determination that it was inequitable." *Halliburton*, 925 F.2d at 2443 (citation omitted).

7.

Inequitable conduct practiced with respect to one patent with a group of closely related and commonly asserted patents renders other patents within that same group unenforceable. *See Keystone Driller Co. v. General Escalator*, 290 U.S. 240, 246-47 (1933). Since the '605 and '513 patents issued from a single patent application, inequitable conduct as to the '605 patent application would also bar enforcement of the '513 patent.

**8.**

Copying is evidence that an invention was not obvious. *See Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S. Ct. 684, 15 L.E.2d 545 (1966); *Avia Group Int'l, Inc. v. L.A. Gear California, Inc.*, 853 F.2d 1557, 1564 (Fed. Cir. 1988). The only material information about copying is that there is a nexus between the merits of the claimed invention and commercial success. *See L.A. Gear California*, 853 F.2d at 2564. As discussed in the Court's findings of fact, Wang demonstrated the existence of this nexus.

**9.**

Materiality does not presume intent. Intent to mislead the PTO cannot be inferred solely from a patentee's alleged withholding of material prior art information. *Braun, Inc. v. Dynamics Corp. of Am.*, 975 F.2d 815, 822 (Fed. Cir. 1992). Therefore, in attempting to prove inequitable conduct, Mitsubishi cannot rely solely on Wang's failure to explicitly inform the PTO that DRAM plastic leaded chip carriers were prior art.

**10.**

In determining whether a combination of prior art teachings renders a patent claim obvious, there must be some teaching, suggestion or incentive in the prior art to make the combination made by the inventor. *See e.g., ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984). The status of PLCC DRAMs was relevant under 35 U.S.C. §§ 102 and 103 to the issue of whether there would be teachings in the prior art regarding the use of the device to produce the claimed invention.

**11.**

As discussed in the Court's findings of fact, the following statement of Mr. Devlin was correct and he had no intent to mislead: "Since the development of the SIMM, several manufacturers have copied it exactly and now include it in their product lines." TX4A at 87, ¶ 4. Wang disclosed its encouragement of others to adopt the SIMM. TX4A at 73, 76, ¶ 3.

**12.**

As discussed in the Court's findings of fact, the statement of Mr. Devlin regarding JEDEC's adoption of SIMM standards was also correct and he had no intent to deceive. TX4A at 87, 16. By 1986, the SIMM was already a de facto standard. TX4A at 87-107; TX2123; Clayton, Tr. 642-643; Taniguchi, Tr. 1977-78.

**13.**

Mr. Clayton's contested statement was also correct and he had no intent to mislead: "Memory Chips encased in plastic leaded chip carriers were not old and well known at the time I conceived my invention." TX4A at 75-76. Mr. Clayton also disclosed sufficient information about the prior art status of the plastic leaded chip carriers. TX4A at 75, ¶ 3. Mr. Clayton's statement was directed at teachings regarding the devices.

**14.**

Finally, the statement by Mr. Milik in his remarks accompanying an amendment to the application regarding others' copying of the SIMM was correct and he had no intent to deceive. TX4A at 73.

**15.**

As discussed in the Court's findings of fact, Mitsubishi did not meet its burden of proof on either element of inequitable conduct, intent and materiality, with respect to statements in the declarations of Messrs. Devlin and Clayton and the statement of Mr. Milik submitted to the PTO during Wang's prosecution of U.S. Patent Nos. 4,727,513 and 4,656,605. The Court does not find the '513 and '605 patents unenforceable on the basis of these statements.

### C. Equitable Estoppel

To prove the defense of equitable estoppel, Mitsubishi had to prove by a preponderance of the evidence that:

(1) Wang communicated something in a misleading way, either by words, conduct or silence;

(2) Mitsubishi relied upon that communication; and

(3) Mitsubishi "would be harmed materially" if Wang is now permitted to assert any claim inconsistent with its earlier conduct.

*Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1028, 1041 (Fed. Cir. 1992) (en banc).

**16.**

Mitsubishi bases its argument on Wang's failure to inform Mitsubishi and JEDEC of its SIMM patent application. Mere silence alone cannot be a basis for estoppel unless "accompanied by some other factor which indicates that the silence was sufficiently

misleading as to amount to bad faith," *Hemstreet v. Computer Entry Sys. Corp.*, 972 F.2d 1290, 1295 (Fed. Cir. 1992) or there was a "clear duty to speak." *Aukerman*, 960 F.2d at 1043.

**17.**

As discussed in the Court's findings of fact, there is neither evidence of Wang's bad faith nor evidence of a duty to disclose a pending patent application to JEDEC.

**18.**

The only two cases that have found a duty to inform an industry standards-setting organization of patent rights, *Stambler v. Diebold Inc.*, 11 U.S.P.Q.2d (BNA) 1709 (E.D.N.Y. 1988), *aff'd mem.*, 878 F.2d 1445 (Fed. Cir. 1989); and *Potter Instrument Co., v. Storage Technology Corp.*, 207 U.S.P.Q. (BNA) 763 (E.D., Va. 1980), *aff'd on other grounds*, 641 F.2d 190 (4th Cir. 1981), are readily distinguishable from this case. Both of these cases concerned a failure to inform an ANSI committee in the mid-1970's of then existing, issued patents where the court found a clear duty to do so. Both cases involve standards which defined elements claimed by the patents and The fact patterns in these cases do not apply to Wang's conduct. As discussed in the Court's findings of fact, the JEDEC standards can be followed without infringing Wang's patent.

**19.**

In *Stambler*, 11 years before suit plaintiff notified defendant of his issued patent and did not contact defendant again until filing suit. However, 10 years before bringing suit he concluded that his already issued patent was infringed both by a proposed industry standard and by the defendant. The plaintiff

sat on the ANSI committee considering the proposed standard without notifying it of his previous conclusion of infringement. The court found that "[u]nder these circumstances, plaintiff had a duty to speak out and call attention to his [issued] patent" and "plaintiff's [10 year] silence could reasonably be interpreted as an indication that plaintiff had abandoned its patent claims." *Stambler*, 11 U.S.P.Q.2d at 1715.

As discussed in the Court's findings of fact, the Court does not find any such Stambler "circumstances" present here. Wang never had an issued patent to disclose to JEDEC during the time period the standard was being considered. Thus, there was no patent on which any infringement determination could have been made. Furthermore, prior to the publication of the standard, there is neither evidence that an indication that a patent would ever issue nor that there was a policy giving rise to duty to inform JEDEC of its patent application. Moreover, Wang notified Mitsubishi of its issued patents in December, 1989, and did not delay for 10 years before filing suit.

**20.**

In *Potter*, the lower court found a duty to speak due to plaintiff's *intentional* failure to bring its ownership of an issued patent to the attention of an ANSI committee of which plaintiff was a member. 207 U.S.P.Q. at 769. The committee had a written policy, of which all members were aware, requiring disclosure of issued patents. *Id.* at 766. Despite the finding of a clear duty to speak and an intentional failure to comply with the policy, the appellate court specifically declined to uphold the lower court decision based upon the finding of estoppel. *Potter*, 641 F.2d at 192. In this case, as discussed, the Court finds that Wang had no duty to

speak under the JEDEC policy, and there is no evidence of an intentional failure to comply with some alleged informal policy.

**21.**

The cases relied upon by Mitsubishi do not support a finding of equitable estoppel here. Those cases involved facts that gave rise to a duty to speak, such as decade-long delays in enforcing an *issued* patent, pre-existing business relationships, or joint development of an invention. The Court finds no such similar facts, as previously discussed. *See Stryker Corp. v. Zimmer, Inc.*, 741 F. Supp. 509 (D.N.J. 1990) (patentee had knowledge for over ten years of industry-wide infringement of issued patent and did not sue to enforce patent until *11* and *15* years later); *Lymo Indus., Inc. v. Monarch Marking System, Inc.*, 474 F. Supp. 412, 417 (N.D. Tex. 1979) (notice of infringement threatening "prompt and vigorous enforcement of the patent," followed by silence and *11* year delay in filing suit); *Lukens Steel Co. v. American Locomotive Co.*, 197 F.2d 939 (2d Cir. 1952) (pre-existing business relationship between the parties and defendant solicited plaintiff patentee to help design new product); *Kurt H. Volk, Inc. v. Foundation for Christian Living*, 534 F. Supp. 1059 (S.D.N.Y. 1982) (pre-existing business relationship between parties and joint development of invention which plaintiff later patented without defendant's knowledge); *Davis Harvester Co. v. Long Mfg. Co.*, 252 F. Supp. 989 (E.D.N.C. 1966), (employer-employee relationship and fraudulent attempt to misappropriate invention) *aff'd*, 373 F.2d 513 (9th Cir. 1967).

**22.**

In *Hemstreet*, the Federal Circuit explained that proof of estoppel requires proof that a party that

entered into a business "in reliance upon supposed actions of [the patentee], rather than a business judgment of its own . . . ." *Hemstreet*, 972 F.2d at 1294-95; *see Minnesota Mining & Mfg. Co. v. Berwick Indus., Inc.*, 373 F. Supp. 851, 869-70 (M.D. Pa. 1974) (no reliance where "the most important factor which led [defendant] to increase production was the new market [for product]"), *aff'd*, 532 F.2d 330 (3d Cir. 1976). As discussed in the Court's findings of fact, Mitsubishi's entry into SIMM production was a business judgment of its own and not in reliance upon Wang's actions.

**23.**

Economic harm is not loss or damages attributable to a finding of liability for infringement. *Aukerman*, 960 F.2d at 1033. Therefore, payment of a royalty for past infringement and/or an injunction against future infringement cannot evidence economic harm.

**24.**

Economic prejudice requires that an infringer has "explicitly proven a nexus" between the patentee's delay in notifying the infringer of its patent claims and the infringer's decision to invest in equipment and expand production. *See Hemstreet*, 972 F.2d at 1294 (expenditures totaling over $50 million were not evidence of economic prejudice because [infringer] "would have expanded [its] business no matter what the patentee 'did or did not do.'" (citation omitted) *ABB*, 828 F. Supp. at 1394. *See* McCarthy, Tr. 1391 ("the business opportunity is to make SIMMs as a new product line and what SIMMs represent is a natural product extension for anybody who makes DRAMs. . . "). As discussed in the Court's findings of fact, Mitsubishi failed to prove this nexus.

**25.**

Even if the Court were to find that Mitsubishi proved the three elements of equitable estoppel, the Court must "take into consideration any other evidence and facts respecting the equities of the parties in exercising its discretion and deciding whether to allow the defense of equitable estoppel to bar the suit." *Aukerman*, 960 F.2d at 1043. As discussed in the Court's findings, the Court finds the equities here merit a finding in favor of Wang.

**D. Laches**

Laches requires affirmative proof of two elements: (1) "[Wang] delayed filing suit for an unreasonable and inexcusable length of time from the time [Wang] knew or reasonably should have known of its claim against [Mitsubishi]" and (2) "the delay operated to the prejudice or injury of [Mitsubishi]." *Aukerman*, 960 F.2d at 1032. The period of delay is measured from the issuance of the patent to the date of suit. *Id.* The period of delay here is, therefore, from February, 1988 when the '513 patent issued, until June, 1992. The requisite material prejudice for laches is the same as for equitable estoppel. *Id.* at 1033.

**26.**

There is no unreasonable delay where a patentee "was busy enforcing his patent rights elsewhere" prior to taking action against another and has been involved in negotiations with the accused infringer. *See Hemstreet*, 972 F.2d at 1293); *Auckerman*, 960 F.2d at 1033. The Federal Circuit has held there is no requirement that a plaintiff has communicated its reasons for delay to defendant. As discussed in the

Court's findings of fact, the Court finds Wang's delay justified and not unreasonable.

**27.**

As previously discussed, Mitsubishi failed to prove that it has been materially prejudiced by Wang's delay. *Supra*, II.C. Consequently, Mitsubishi did not meet its burden of proof on laches.

**E. Patent Misuse**

The Supreme Court long ago explained that a patentee may sue to enforce its patents:

> Patents would be of little value if infringers could not be notified of the consequences of infringement or proceed against in the courts. Such action considered by itself cannot be said to be illegal.

*Virtue v. Creamery Package Manufacturing Company and Owatonn Company*, 227 U.S. 8, 37-38 (1912); *see Atari Games Corp. v. Nintendo of America, Inc.*, 897 F.2d 1572, 1577 (Fed. Cir. 1990) ("patent suit is presumed to be brought in good faith"); also *Technician Instruments Corp. v. Alpkem Corp.*, 866 F.2d 417, 421 (Fed. Cir. 1989).

**28.**

The doctrine of patent misuse "requires that the alleged infringer show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant with anti competitive effect." *Windsurfing Int'l Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir.), *cert. denied*, 477 U.S. 905 (1986); *see USM Corp. v. SPS Technologies*, Inc., 694 F.2d 505, 510 (7th Cir.

1982) (discussing examples of misuse), *cert. denied*, 462 U.S. 1107 (1983).

**29.**

A patentee's silence about its patent application is not evidence that a patentee was impermissibly trying to broaden the scope of its later issued patents. *See generally United States v. Telectronics Proprietary, Ltd.* 607 F. Supp. 753 (D. Colo. 1983) (refusal to revoke exclusive license award on account of material misrepresentation could not be patent misuse as a matter of law). As previously discussed there is no evidence that Wang improperly attempted to extend the scope of its SIMM patents and no evidence that any of Wang's actions had an anti competitive effect.

**30.**

The "maxim requiring clean hands [is applicable] only where some unconscionable act of one coming for relief has immediate and necessary relation to the equity that he seeks in respect of the matter in litigation." *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 245, 54 S. Ct. 146, 147, 78 L.Ed. 293 (1933). Unclean hands requires proof of "such violations of conscience as in some measure affect the equitable relations between the parties in respect of something brought before the court for adjudication." *Id.*, 290 U.S. at 245. As discussed in the Court's findings of fact, there is no evidence that Wang has engaged in "some unconscionable act" in attempting to enforce its SIMM patents against Mitsubishi.

## F. General

**31.**

All Findings of Fact which are Conclusions of Law are adopted as Conclusions of Law.

## CONCLUSION

**32.**

The Court concludes that Mitsubishi failed to prove its equitable defenses of inequitable conduct, equitable estoppel, laches, patent misuse and unclean hands and, therefore, Wang's '513 and '605 patents are enforceable against Mitsubishi.

Dated at Los Angeles, California, this 24th day of October, 1994.

/s/ John G. Davies
John G. Davies
United States District Judge

## APPENDIX F

IN THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

| | |
|---|---|
| WANG LABORATORIES, INC.<br><br>Plaintiff,<br><br>v.<br><br>MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Defendant. | Consolidated With 92-4698-JGD (JGx)<br><br>Consolidated With Civil Action No. 92-3891-JDG (Kx) |
| CONSOLIDATED WITH | |
| MITSUBISHI ELECTRIC CORPORATION and MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Plaintiffs,<br><br>v.<br><br>WANG LABORATORIES, INC., AND DOES 1 through 50.<br><br>Defendants. | JUDGMENT |

This action for patent infringement brought by Wang Laboratories, Inc. ("Wang") against Mitsubishi Electric Corporation ("MELCO") and Mitsubishi Electronics America, Inc. ("MELA") (collectively "Mitsubishi") was tried before a jury, Honorable John G. Davies, presiding. The jury returned a verdict on the issues of validity, infringement, and enforceability and an advisory verdict on Mitsubishi's equitable defenses. The Court has determined the issues arising from Mitsubishi's equitable defenses as demonstrated by the Findings of Fact and Conclusions of Law filed October 20, 1994. The court expressly directs the entry of this judgment on Wang's patent infringement claims, there being no just reason for delay.

IT IS THEREFORE ORDERED AND ADJUDGED as follows:

1. United States Patent Nos. 4,656,605 ("'605 patent") and 4,727,513 ('513 patent") are not invalid under 35 U.S.C. § 103.

2. The '605 and '513 patents are not invalid under 35 U.S.C. § 112 for failure to disclose the inventor's best mode symmetrical power and ground pin configuration.

3. The '605 and '513 patents are not invalid under 35 U.S.C. § 115 for failure to name the correct inventor of the claimed subject matter in the original oath submitted with the original application for those patents.

4. The '605 and '513 patents are not invalid under 35 U.S.C. § 116 or 35 U.S.C. § 256 for failure to name additional inventors of the claimed subject matter

or to correct the named inventors of the claimed subject matter.

5. Claims 1 and/or 2 of the '513 patent are infringed by Mitsubishi's accused memory modules.

6. MELCO's infringement was not willful.

7. MELA's infringement was not willful.

8. Wang impliedly licensed Mitsubishi to make, use and sell the subject matter of the '513 patent under the doctrine of legal estoppel.

9. Wang did not expressly waive its proprietary rights in the subject matter of the '513 patent.

10. Wang did not engage in inequitable conduct before the Patent and Trademark Office in prosecuting its '605 and '513 patents.

11. Wang did not misuse its '605 and '513 patents.

12. Wang did not engage in unclean hands regarding the '605 and '513 patents.

13. Wang is not equitably estopped from asserting the '605 and '513 patents against Mitsubishi.

14. Wang is not prevented from asserting the '605 and '513 patents against Mitsubishi under the doctrine of laches.

15. The Court will schedule further proceedings as appropriate after its decisions on any motions filed under Fed. R. Civ. P. 50, 52 or 59.

Dated at Los Angeles, California, this 20th day of Jan., 1995.

/s/ John G. Davies
HONORABLE JOHN G. DAVIES
UNITED STATES DISTRICT JUDGE

**APPENDIX G**

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

| | |
|---|---|
| WANG LABORATORIES, INC.<br><br>Plaintiff,<br><br>v.<br><br>MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Defendant.<br>---<br>CONSOLIDATED WITH<br>---<br><br>MITSUBISHI ELECTRIC CORPORATION and MITSUBISHI ELECTRONICS AMERICA, INC.,<br><br>Plaintiffs,<br><br>v.<br><br>WANG LABORATORIES, INC.,<br><br>Defendants. | CASE NOS.<br>CV 92-4698 JGD<br>CV 92-3891 JGD<br><br>ORDER DENYING MOTIONS FOR JUDGMENT AS A MATTER OF LAW, MOTION TO AMEND JUDGMENT, AND MOTION FOR PARTIAL NEW TRIAL |

On March 6, 1995, the Court heard argument on the following six motions: (1) Wang's Motion for Judgment as a Matter of Law on the Implied License Defense; (2) Wang's Motion for a Partial New Trial on the Implied License Defense; (3) Wang's Motion to Amend the Judgment on the Implied License Defense; (4) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for Failure to Disclose the Inventor's "Best Mode"; (5) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for "Obviousness"; and (6) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Infringement. Having considered the parties' written submission and oral arguments, the Court hereby DENIES all six motions.

## FACTUAL BACKGROUND

This is a patent infringement action. On June 4, 1992, plaintiff Wang Laboratories, Inc. ("Wang") filed suit in the United States District Court for the Eastern District of Virginia. Wang alleged that Mitsubishi Electronics America, Inc. ("Mitsubishi") had infringed two patents, U.S. Patent Nos. 4,656,605 ("the '605 patent") and 4,727,513 ("the '513 patent"), which disclose a commercially successful computer memory device known as a Single In-Line Memory Module ("SIMM"). Wang claimed that Mitsubishi manufactures, sells and uses infringing SIMMs in the United States and also imports infringing SIMMs manufactured by its Japanese parent company for sale and use in the United States. Based on these allegations, Wang sought damages, injunctive relief, attorneys' fees and costs.

In July 1992, pursuant to 28 U.S.C. § 1404 and upon the defendant's motion, the case was transferred to the Central District of California. The action was given the case number CV 92-4698 JGD (the "Wang action").

Prior to the transfer of Wang action, Mitsubishi Electronics America, Inc. and its parent company, Mitsubishi Electric Corporation (collectively "Mitsubishi"), jointly filed an action against Wang in this Court, encaptioned *Mitsubishi Electric Corporation and Mitsubishi Electronics America, Inc. v. Wang Laboratories, Inc., et al.*, CV 92-3891 JGD ("the Mitsubishi action"). Mitsubishi seeks a declaration of non-infringement of the SIMM patents, and allege federal and state antitrust and unfair competition claims against Wang.

On July 20, 1993, the Court granted Wang's motion for partial consolidation of the Wang action with the first through sixth causes of action of the Mitsubishi action, leaving only Mitsubishi Electric Corporation's independent patent infringement claims against Wang to be prosecuted separately. Also on July 20, the Court granted Wang's motion for separate trials of its patent infringement claims and Mitsubishi's affirmative antitrust and tort claims, but declined to stay discovery on the antitrust and tort claims.

On September 29, 1993, the parties filed a Stipulation Re Non-Infringement of "Lateral" and "3 Package" SIMMS and Withdrawal of Summary Judgment Motion. The parties thereby agreed that only one configuration of the allegedly infringing SIMMs, the "Classic" SIMM, remains at issue in Wang's infringement action.

In December 1993, the Court largely denied four summary judgment motions filed by Wang. The case was tried during the summer of 1994.

On July 12, 1994 the jury returned its special verdict form, in which it made the following findings: Mitsubishi's SIMMS infringe the '513 patent; the '513 and '605 patents are valid; and that Mitsubishi prevailed on the implied license defense, meaning that Wang had licensed Mitsubishi to make, use and sell the subject matter of the '513 patent. Wang and Mitsubishi now file six post-trial motions which seek either judgment as a matter of law, partial new trial, or amendment of the judgment.

## DISCUSSION

### I.

*Wang's Motions Regarding the Implied License Defense*

The jury expressly found that Mitsubishi had proven by a preponderance of the evidence that Wang impliedly licensed Mitsubishi to make, use and sell the subject matter of the '513 patent. The judgment entered in this action provides that this implied license was found under the doctrine of legal estoppel.

Wang now brings three separate motions which seek to alter the jury's findings in this regard. The first is for judgment as a matter of law on the implied license issue; the second is for partial new trial on the issue; and the third is an attempt to amend the judgment with respect to the implied license issue, to provide that Mitsubishi is liable to Wang for royalty payments.

## A. A. Wang's Motion for Judgment as a Matter of Law on the Implied License Defense

### 1. 1. Legal Standard for Judgment as a Matter of Law

Federal Rule of Civil Procedure 50(b) allows a party to renew a Motion for Judgment as a Matter of Law where a Rule 50(a) motion is denied at the close of all the evidence. The motion should be granted only if there is "no legally sufficient evidentiary basis for a reasonable jury to find for that party on an issue . . . ." The Court must consider all of the evidence before the jury in a light most favorable to the nonmoving party, drawing all reasonable inferences in favor of the nonmoving party. *See Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985). "The fundamental principle is that there must be a minimum of judicial interference with the jury." 9A Wright & Miller, *Federal Practice and Procedure*, Civil § 2524, at 261 (1995).

### 2. 2. The Implied License Defense

The Court instructed the jury that:

> In order to prove the defense of implied license, [Mitsubishi] must establish by a preponderance of the evidence that (1) there was an existing relationship between Wang and [Mitsubishi]; (2) within that relationship, Wang transferred a right to use the SIMM invention to [Mitsubishi]; (3) the right was transferred for valuable consideration;

> and (4) Wang has now denied the existence of the right it transferred to [Mitsubishi].
>
> In deciding whether [Mitsubishi has] proved the existence of an implied license, you may consider statements and conduct of Wang from which one could reasonably infer Wang's consent to Mitsubishi's making, using or selling products to persons other than Wang under the patents.

**3. 3. Analysis**

Wang's motion for judgment as a matter of law at the close of all the evidence was based only on the element of consideration. Accordingly, this is the only ground upon which it may now renew its motion for judgment as a matter of law. *Lifshitz v. Walter Drake & Sones, Inc.*, 806 F.2d 1426, 1429-30 (9th Cir. 1986); *Karns v. Emerson Elec. Co.*, 817 F.2d 1452, 1455 (10th Cir. 1987).

**a. (a) Proving Implied License: Element of Consideration**

Wang contends that there was no evidence of consideration paid from Mitsubishi to Wang. Mitsubishi contends, however, that the jury heard substantial evidence in this regard, including the facts that: (1) Wang obtained the benefits of high volume supply and downward pressure on price by permitting Mitsubishi to manufacture and sell X9 memory modules without asserting a proprietary interest in Wang's design; (2) Wang received the benefit of Mitsubishi absorbing the development and tooling

costs of modules based on Wang's design; and (3) Wang received the benefits of Mitsubishi redesigning its X9 memory modules at Wang's request according to Wang's specifications to meet Wang's needs.

The Court finds that, viewed in the light most favorable to Mitsubishi, and drawing all reasonable inferences in Mitsubishi's favor, the evidence of record was sufficient to lead a reasonable jury to conclude that consideration was present.

**b. (b) Proving Implied License: Remaining Elements**

Wang also asserts that Mitsubishi did not establish the remaining elements of the implied license defense. Having failed to assert alternative grounds for its motion for judgment as a matter of law at the close of all the evidence, however, Wang may not now assert such new grounds at the Rule 50(b) stage. *Lifshitz v. Walter Drake & Sones, Inc.*, 806 F.2d 1426, 1429-30 (9th Cir. 1986); *Karns v. Emerson Elec. Co.*, 817 F.2d 1452, 1455 (10th Cir. 1987).

Even if Wang could assert new grounds by way of the instant motion, the Court finds that those new grounds do not warrant judgment as a matter of law in its favor. For the reasons set forth below, the Court finds that Mitsubishi presented substantial evidence to support each of the remaining elements of the implied license defense.

**(1) (1) Element of "Existing Relationship"**

Wang presents a slightly different list of elements for the implied license defense, substituting the word "agreement" for the phrase "existing relationship" which was used in the Court's instruction. Wang then argues that judgment in its favor is appropriate because there was no "agreement." This argument is without merit. Wang is not entitled to reformulate the elements of implied license defense at this late stage.

The Court finds that the evidence of record was more than sufficient to lead a reasonable jury to conclude that there was such an "existing relationship" because Mitsubishi presented overwhelming evidence that the parties held several meetings regarding the X9 memory modules.

**(2) (2) Element of "Transfer"**

The evidence of record was also more than sufficient to lead a reasonable jury to conclude that Wang transferred the right to make, use and sell the X9 Memory Module design. The Court instructed the jury that they could rely upon "statements and conduct of Wang from which one would reasonably infer Wang's consent . . . ." Court's Instruction No. 64. The record is replete with such statements and conduct, including Wang's representations to the patent office and to its own bank that Mitsubishi was using the subject matter of the patent.

The Court thus finds that a reasonable jury could conclude that Mitsubishi established all of the elements

of the defense of implied license. Accordingly, the Court DENIES Wang's Motion for Judgment as a Matter of Law on the implied license defense.

**B. B. Wang's Motion for New Trial on Implied License Defense**

**1. 1. Standard for New Trial**

Federal Rule of Civil Procedure 59(a) provides in relevant part:

> A new trial may be granted to all or any of the parties and on all or part of the issues . . . for any of the reasons for which new trials have been granted in actions at law in the courts of the United States . . . .

Courts have ordered new trials where the jury reached a verdict "contrary to the clear weight of the evidence" and which is therefore a "miscarriage of justice." *Murphy v. City of Long Beach*, 914 F.2d 183, 187 (9th Cir. 1990). *See also* Local Rule 15.1(g) (allowing new trial for "insufficiency of the evidence to justify the verdict"). The grant of a new trial is "confided almost entirely to the exercise of discretion on the part of the trial court." *Allied Chem. Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36, 101 S. Ct. 188, 199 (1980); *Murphy v. City of Long Beach*, 914 F.2d 183, 186 (9th Cir. 1990).

**2. 2. Analysis**

The Court has already concluded that the jury's verdict in favor of Mitsubishi on the implied license defense was supported by substantial evidence. The

Court DENIES the Motion for Partial new Trial on this basis alone.

The Court further finds that a Partial New Trial is in appropriate in these circumstances because Wang cannot establish that the implied license defense "clearly" appears "distinct and separate" from the remaining claims and defenses, as is required by the Supreme Court's decision in *Gasoline Prods. Co. v. Chaplin Refining Co.*, 283 U.S. 494, 500, 51 S. Ct. 513, 515 (1931). To the contrary, Wang previously represented to this Court that there is a "tremendous overlap" of common issues among all the claims and defenses.

For these independent reasons, the Court DENIES Wang's Motion for Partial New trial on the implied license defense.

### C. C. Wang's Motion to Amend Judgment on Implied License Defense

Wang contends that the Jury's finding of an implied license mandates a finding by the Court that there was an implied contract. Given an implied contract, Wang contend that there must be an implied promise to pay Wang a royalty fee for use of the patent subject matter.

#### 1. 1. Standard for Amending Judgment

Federal Rule of Civil Procedure 59(e) allows a party to make a motion to amend or alter the judgment within 10 days of the entry of judgment. It cannot be used, however, to raise entirely new matters which were not raised in the pleadings or at trial. *Concordia College v. W.R. Grace & Co.*, 999 F.2d 326, 330 (8th Cir.

1993); *FDIC v. World University, Inc.*, 978 F.2d 10, 16 (1st Cir. 1992); *FDIC v. Meyer*, 781 F.2d 1260, 1268 (7th Cir. 1986).

**2. 2. Analysis**

Although styled as a "Motion to Amend Judgment," Wang's motion essentially asks this Court to amend its *Complaint* to insert a breach of contract theory, and then to grant Wang judgment as a matter of law on that claim. If the judgment were amended as requested by Wang, it would have the exact opposite effect of the verdict reached by the jury. It would essentially negate the absolute implied license defense by awarding Wang the same quantum of damages that it would have recovered if it had proved infringement and prevailed on the implied license defense. Wang's motion thus seeks a result that is incongruous with the jury's verdict, and this forms a separate and independent basis for the Court's decision to DENY Wang's motion.

The motion not only reaches an incongruous result, but it is based upon the flawed premise that the jury's finding of an implied license mandates a finding of implied contract, which in turn mandates a finding that royalties are due Wang. The United States Supreme Court has held that a patent license is "no more than a 'mere waiver of the right to sue.'" *General Talking Pictures Corp. v. Western Elec. Co.*, 304 U.S. 175, 181, 58 S. Ct. 849, 852 (1938), (citing *DeForest Radio Tel. & Tel. Co. v. United States*, 273 U.S. 236, 47 S. Ct. 366 (1927). In fact, the Court of Federal Claims has rejected precisely the argument advanced by Wang here:

> Plaintiffs argue that the only way defendant may rely on an implied license is by compensating plaintiffs under the terms of the subcontract. Plaintiffs rely upon *DeForest*, where the Supreme Court held that where an implied license is found to have been granted, the owner of the patent is entitled to reasonable compensation. Plaintiffs thereby argue that to avoid an infringement suit, the implied licensee must honor its obligations in contract. This is an incorrect reading of *DeForest*. *DeForest* merely states that an implied license is a complete defense to an action for infringement, and that any action brought after the granting of an implied license must be contractual in basis.

*Blais v. United States*, 31 Fed. Cl. 422, 427 (1994). Mitsubishi properly pleaded the existence of an implied license as an affirmative defense. The jury found in its favor on this issue. Wang cannot turn this absolute defense into a basis for affirmative relief. The Court therefore DENIES Wang's Motion to Amend the Judgment.

II.

*Mitsubishi's Motions For Judgment as a Matter of Law*

Mitsubishi brings three Motions for Judgment as a Matter of Law. The first alleges invalidity of the patents for failure to disclose the "best mode"; the second alleges invalidity for "obviousness"; and the third alleges noninfringement.

## D. A. Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for Failure to Disclose the "Best Mode"

Mitsubishi argues that the patents are invalid as a matter of law because they fail to disclose the "best mode" contemplated by inventor James Clayton for practicing his memory module.

### 1. 1. Legal Standard for Judgment as a Matter of Law

Federal Rule of Civil Procedure 50(b) allows a party to renew a Motion for Judgment as a Matter of Law where a Rule 50(a) motion is denied at the close of all the evidence. The motion should be granted only if there is "no legally sufficient evidentiary basis for a reasonable jury to find for that party on an issue . . . ." The Court must consider all of the evidence before the jury in a light most favorable to the nonmoving party, drawing all reasonable inferences in favor of the nonmoving party. *See Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985). "The fundamental principle is that there must be a minimum of judicial interference with the jury." 9A Wright & Miller, *Federal Practice and Procedure*, Civil § 2524, at 261 (1995).

### 2. 2. Rules regarding "Best Mode" Analysis

Patents carry a statutory presumption of validity under 35 U.S.C. § 282 that can be overcome only by clear and convincing evidence. *Tillotson, Ltd. v. Walbro Corp.*, 831 F.2d 1033, 1036-37 (Fed Cir. 1987). Pursuant to 35 U.S.C. § 112, the specification section of a patent

"shall set forth the best mode contemplated by the inventor of carrying out his invention." Thus, if an inventor develops specific instrumentalities or techniques which he recognizes as the best way of carrying out his invention, he must adequately disclose that information to the public. The purpose of the best mode requirement is to ensure that the public, in exchange for rights given the inventor under patent laws, obtains a full disclosure of the invention's preferred embodiment. *Dana Corp. v. IPC Ltd.*, 860 F.2d 415, 418 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1067 (1989). Whether an inventor complied with this requirement is a two-part analysis:

> The first is whether, at the time the inventor filed his patent application, he knew of a mode of practicing his claimed invention that he considered to be better than any other. This part of the inquiry is wholly subjective and resolves whether the inventor must disclose any facts in addition to those sufficient for enablement. If the inventor in fact contemplated such a preferred mode, the second part of the analysis compares what he knew with what he disclosed--is the disclosure adequate to enable one skilled in the art to practice the best mode or, in other words, has the inventor "concealed" his preferred mode from the "public"? Assessing the *adequacy* of the disclosure, as opposed to its *necessity*, is largely an objective inquiry that depends upon the scope of the claimed invention and the level of skill in the art.

*Chemcast Corp. v. Arco Industries Corp.*, 913 F.2d 923, 927-28 (Fed. Cir. 1990) (emphasis in original).

**3. 3. Analysis**

Wang concedes the first part of the best mode analysis. The question is whether the symmetrical power/ground pinout was adequately disclosed by the patents' specifications, such that specifications would inform one skilled in the art of the best mode.

It is undisputed that neither of the patents at issue expressly disclosed the best mode, but the parties dispute whether they impliedly did so. Mitsubishi contends that the record is devoid of evidence to support such a theory, while Wang contends that there were several facts in evidence upon which the jury could have relied to conclude that the patents impliedly taught the best mode for carrying it out.

The Court notes that at trial, Wang's expert, Dr. Frey, used an exhibit having an outline of a representative Mitsubishi SIMM, an outline of a standard DRAM noting the functions corresponding to each lead of the chip carrier, and Figure 1 of the patents. He illustrated how the patents teach that nine terminals are required for data input and output signals; how the connections from the chips to the edge are the shortest possible; how the ground operates; and how symmetry was possible.

The Court finds that substantial evidence supports the jury's finding that Mitsubishi failed to prove by clear and convincing evidence that the patents failed to teach the best mode of wiring the SIMM. The Court DENIES Mitsubishi's Motion for Judgment as a

Matter of Law on the issue of invalidity for failure to disclose the inventor's "best mode."

### E. B. Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for "Obviousness"

Mitsubishi next argues that the patents are invalid as a matter of law for "obviousness" pursuant to 35 U.S.C. § 103.

#### 1. 1. Legal Standard for Judgment as a Matter of Law

Federal Rule of Civil Procedure 50(b) allows a party to renew a Motion for Judgment as a Matter of Law where a Rule 50(a) motion is denied at the close of all the evidence. The motion should be granted only if there is "no legally sufficient evidentiary basis for a reasonable jury to find for that party on an issue . . . ." The Court must consider all of the evidence before the jury in a light most favorable to the nonmoving party, drawing all reasonable inferences in favor of the nonmoving party. *See Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985). "The fundamental principle is that there must be a minimum of judicial interference with the jury." 9A Wright & Miller, *Federal Practice and Procedure*, Civil § 2524, at 261 (1995).

#### 2. 2. Rules Regarding Obviousness

Patents carry a statutory presumption of validity under 35 U.S.C. § 282 that can be overcome only by clear and convincing evidence. *Tillotson*, 831 F.2d at 1036-37. Under the Supreme Court's decision in

*Graham v. John Deer Co.*, 383 U.S. 1, 17 (1986), obviousness is determined by underlying factual inquiries regarding: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness, including long-felt but unsatisfied need, failure of others, commercial success, and copying and recognition by others. *See Heidelberger Druckmaschiner v. Hantscho Commercial Prods.*, 21 F.3d 1068, 1071 (Fed. Cir. 1994).

**3. 3. The-Jury's Finding Regarding Obviousness**

The jury found that the SIMM patents are not invalid because they would have been obvious to one of ordinary skill in the art. "When the *Graham* factual underpinnings have been genuinely disputed [the Court must] presume that the jury resolved them in favor of the verdict winner." *Wang Labs., Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993).

**4. 4. Mitsubishi's Argument Regarding Obviousness**

Mitsubishi argues that the DTS module (TX 4144) and the Allen-Bradley references (TX 1011, TX 1012, and TX 4217) are analogous, prior art, and that the Texas Instruments ("TI") module is evidence of the level of ordinary skill in the art. Under the Federal Circuit's decision in *Wang Labs., Inc. v. Toshiba*, this Court is required to presume that: the DTS module is not prior art; if the DTS module were prior art, it is nonanalogous; Allen-Bradley references are nonanalogous; and the TI module is not relevant evidence of the ordinary level of skill in the art.

Mitsubishi can only overcome these presumptions by presenting clear and convincing evidence.

**5. 5. Analysis**

The Court finds that substantial evidence supports the jury's verdict with respect to each of the *Graham* elements.

**a. (a) Scope and Content of Prior Art**

The jury heard testimony by Ronald Parente, Stephen Stecyk, Paul Laskow and George Northover that the DTS module was not prior art because it was neither "in public use" nor "on sale." The jury also heard testimony by Dr. Frey that the DTS Module and Allen-Bradley references were nonanalogous prior art. Wang presented several distinctions between the DTS Module and the SIMM, including: limited density; expandability of memory; cost; application; flexibility; ability to store programs. Wang also presented several distinctions between the Allen-Bradley references and the SIMM, including: limited density; memory capacity; cost; and working environment.

The Court thus finds that there is substantial evidence to support a finding that the DTS Module and Allen Bradley references were nonanalogous prior art, and that one skilled in the art would not look to said items to solve problems solved by the SIMM invention.

**b. (b) Differences Between the Claims and the Prior Art**

The jury had before it significant evidence regarding the differences between the SIMM and the

prior art, including differences between: the memory chips; the chip packages; the substrate size; the substrate material; and the specific claim of "30 terminals" providing expandability. Not only are these individual differences apparent, but the uniqueness of their combination is significant.

The Court thus finds that there is substantial evidence to support a finding that the SIMM claims differed from prior art.

**c. (c) The Level of Ordinary Skill in the Art**

Dr. Frey opined that one of ordinary skill in the art was "a person of a Bachelor's Degree in Electrical Engineering, and two years of experience in packaging of components for electronic computers." Dr. Frey also opined that the TI Module was not relevant evidence of the level of ordinary skill. The Court finds that this is substantial evidence from which the jury could have determined the level of ordinary skill in the art, and that the jury had substantial evidence for determining that the TI Module is not evidence of the level of ordinary skill in the art.

**d. (d) Objective Evidence of Nonobviousness**

The jury heard testimony by Dr. Frey and Dr. Thomas McCarthy that the SIMM has been extremely successful for reasons attributable to the claimed invention. Wang offered proof that its SIMM solved the long-felt need for personal computer memory having all the attributes of easy expandability, low cost, compactness and easy reparability. Others had failed at

producing products like the SIMM. This is further substantial evidence to support the jury's finding that the SIMM was less than "obvious."

The Court finds that substantial evidence supports the jury's finding that Mitsubishi failed to prove by clear and convincing evidence that the SIMM patents were obvious. The Court therefore DENIES Mitsubishi's Motion for Judgment as a Matter of Law on the issue of invalidity for "obviousness."

### F. C. Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Infringement

Mitsubishi's final motion argues that it is entitled to Judgment as a matter of law because there was no literal infringement of Wang's patents.

#### 1. 1. Legal Standard for Judgment as a Matter of Law

Federal Rule of Civil Procedure 50(b) allows a party to renew a Motion for Judgment as a Matter of Law where a Rule 50(a) motion is denied at the close of all the evidence. The motion should be granted only if there is "no legally sufficient evidentiary basis for a reasonable jury to find for that party on an issue . . . ." The Court must consider all of the evidence before the jury in a light most favorable to the nonmoving party, drawing all reasonable inferences in favor of the nonmoving party. *See Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985). "The fundamental principle is that there must be a minimum of judicial

interference with the jury." 9A Wright & Miller, *Federal Practice and Procedure*, Civil § 2524, at 261 (1995).

**2. 2. The Test for Literal Infringement**

The Federal Circuit applies a two-part test in analyzing claims for patent infringement. First, each patent claim must be interpreted to determine its proper scope and meaning. Second, it must be determined whether an accused device is within the scope of the properly interpreted claim. *Genentech, Inc. v. Welcome Foundation Ltd.*, 29 F.3d 1555, 1561 n.6 (Fed. Cir. 1994). "Claim construction" -- determining the scope of coverage to which a claim is entitled -- is a legal determination based on a number of evidentiary factors. *United States v. Tectronics, Inc.*, 857 F.2d 778, 781 (Fed. Cir. 1988), *cert. denied*, 109 S. Ct. 1954 (1989). These include: (1) the claims at issue; (2) the patent specifications and drawings; (3) the prosecution history of the patents before the Patent and Trademark Office ("PTO"); and (4)the testimony regarding persons working in the relevant field as to the normal or conventional meaning of terms used in the specifications and claims. *In re Hayes Microcomputer Products*, 982 F.2d 1527, 1543 (Fed. Cir. 1992). Once the claims are construed, "[t]he determination of literal infringement is a question of fact." *Id.* at 1541.

**3. 3. Analysis**

Mitsubishi contends that its accused modules do not contain elements of the patented devices such as: plastic lead chip carriers; substrate size; support means at an angle; thirty terminals; and memory chip for storing detection and correction. The Court will address each in turn.

### a. (a) Plastic Lead Chip Carriers

Mitsubishi contends that the 1 and 4 megabyte memory modules do not literally infringe the '513 patent claims because they do not have memory chips packaged in plastic leaded chip carriers. The court finds, however, that substantial evidence supports a finding that the claimed plastic leaded chip carrier encompassed both chip packages now known in the industry as "PLCCs" and SOJs, and is literally found in Mitsubishi's SIMMS. According to Dr. Frey's testimony, one skilled in the art in 1983 would have understood the claimed "plastic leaded chip carrier" as the existing 1983 J-leaded, surface-mounted chip carrier for 64K DRAMs *and* future plastic, J-leaded, surface-mounted chip carriers for future, higher density DRAMS for use on SIMMS.

### b. (b) Minimum Size

Mitsubishi contends that the leadless memory modules do not literally infringe the '513 patent claims because they do not have a substrate which has the minimum size that can accommodate nine memory chips mounted in a single row. The Court finds, however, that substantial evidence supports a finding that Mitsubishi's SIMMS have the claimed substrate size. Mitsubishi's SIMMS substrate is the printed circuit board area required to hold the nine memory chips, the interconnections and thirty terminals. The substrate size of the leadless SIMMS literally meets the claim limitation because the substrate cannot accommodate more than nine memory chips and their required interconnectors.

### c. (c) Support Means At An Angle

Mitsubishi contends that the leadless memory modules do not literally infringe the '513 patent claims because they do not have a "support means for supporting the module at an angle with respect to the motherboard" that is structurally equivalent and functionally identical to the support means described in the '513 patent. In Mitsubishi's leadless SIMMs the module's edge with terminals plus, if applicable, any additional portions of the module that mate with a particular socket, is the support means which is equivalent under 35 U.S.C. § 112 to the support means in the leaded SIMMs. As argued by Wang, the support means on both the leaded and the leadless SIMMs is to allow the module to be supported at an angle with respect to the motherboard with sufficient mechanical security to retain electrical contact between the SIMM and the motherboard in the event of movement. The Court therefore finds that substantial evidence supports a finding that the accused device performs the equivalent function required by the limitation, and incorporates the structure disclosed in the specification, or its substantial structural equivalent, as the means for performing that function.

### d. (d) Thirty Terminals

Mitsubishi contends that the 256 kilobyte and 1 and 4 megabyte memory modules do not literally infringe the '513 patent claims because they do not have thirty terminals for providing access to the nine memory chips. The Court finds, however, that substantial evidence supports a finding that there were thirty terminals. Dr. Frey defined "terminal" as either the metal pins on the edge of the leaded SIMMS or the

metal conducting pads on the edge of the leadless SIMMs. One skilled in the art knew that a terminal was "a metal element of an electronic circuit that's intended for a connection to an external conductor." The patent claims thirty terminals for providing access to the nine DRAMs as needed based on density, with the remaining terminals as "no connects" to allow for future memory expansion. On all of Mitsubishi's SIMMS, the thirty terminals are sufficient for providing access into and out of the nine memory chips. One skilled in the art understood that terminals would be no connects for use with future generation DRAMs.

### e. (e) Storing Detection and Correction Information

Mitsubishi contends that the 256 kilobyte and 1 and 4 megabyte memory modules do not literally infringe the '513 patent claims because they do not have a ninth memory chip for storing detection and correction information. The Court finds, however, that substantial evidence supports a finding that the ninth memory chip could store detection and correction information. The patent specification describes that the ninth bit is for parity checking. Dr. Frey testified that it is "information that helps you detect an error and correct it, if necessary." Mitsubishi's SIMM has a ninth bit that is used for parity, which thus supports the jury's finding of literal infringement of this claim.

## CONCLUSION

For the foregoing reasons, the Court hereby DENIES in full the following six motions: (1) Wang's Motion for Judgment as a Matter of Law on the Implied License Defense; (2) Wang's Motion for a Partial New

Trial on the Implied License Defense; (3) Wang's Motion to Amend the Judgment on the Implied License Defense; (4) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for Failure to Disclose the Inventor's "Best Mode"; (5) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Invalidity for "Obviousness"; and (6) Mitsubishi's Motion for Judgment as a Matter of Law on the Issue of Infringement.

IT IS SO ORDERED.

Dated: MAR 7 1995

/s/ John G. Davies
JOHN G. DAVIES
United States District Judge